OCTOBER
1951

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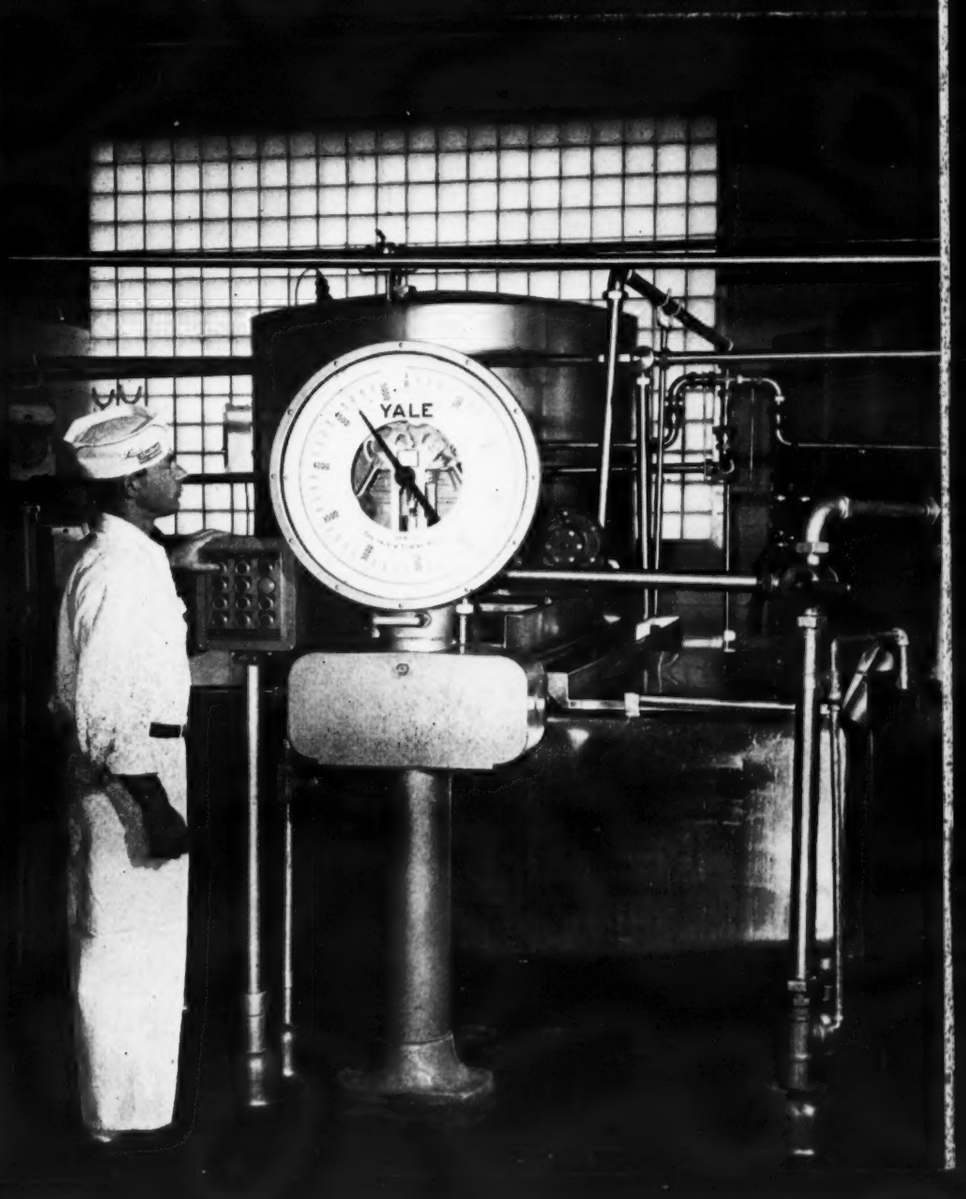
FOOD PROCESSING

Highlights



The Cover Picture

At push button mixing station, one man assembles, blends ingredients and sends them to continuous HTST pasteurizer for ice cream mix production. For details . . . . . See page 10

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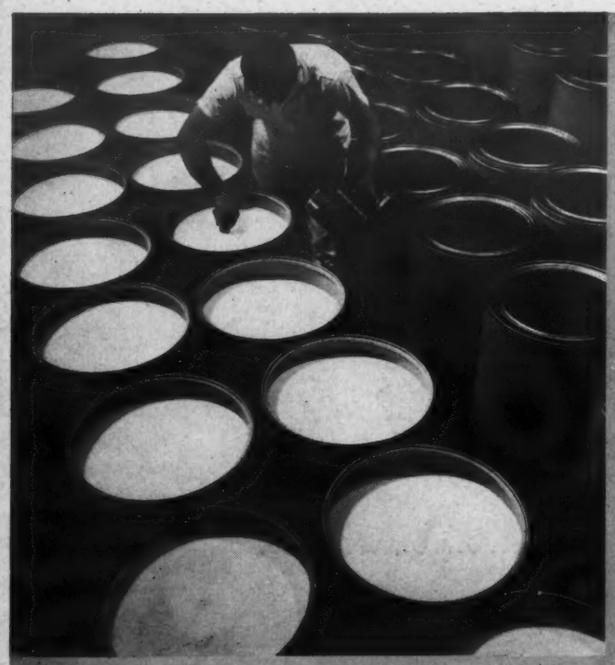

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When inquiring check FP 2316 on handy form, pgs. 2-3

"That's Interesting"

Atlas Powder Co. increases supply of sorbitol from natural sources

Expanded production facilities of this major supplier will make sorbitol, a natural food product, available in quantities of thousands of tons annually. Sorbitol is a white crystalline powder which is derived from corn sugar. Its cost, if extracted from its natural state, would be prohibitive as an ingredient for the food processor.

Sorbitol offers unusually desirable and characteristic advantages as a conditioning agent. Its water holding power changes less with humidity variations than most polyols. It is so effective as a conditioning agent that the Quartermaster Corps includes it in their specifications for some confections.

Sorbitol occurs in the free state in many fruits and berries. Percentage of occurence in typical fruits has been determined as follows: quince 0.9 to 5.1% depending on specie; strawberry 0.075% (from commercial jam); apricot 0.29% from fruit . . . 0.4% from juice; peach 0.5% from juice; prune 0.7%; pear 0.8 to 3.98% depending on specie; plum 1.2% from juice; cherry 1.8 to 3.2% from juice; grape 1.0 to 17.8% from wine depending on specie.

Machine wraps 1-3 sandwiches without card

Machine recently introduced can wrap a sandwich so dexterously that no card is required. It can also wrap small pies and cookies placed on flat card, or a card with upturned ends. Machine requires only one handwheel adjustment for the length of the product. Height and width are automatically taken care of by a self-measuring paper feed. For this reason, two or even three sandwiches stacked on top of each other can be wrapped as a single unit, if desired. Top labeling device can be installed which automatically imprints labels in roll form, cuts them off and seals them to top of package. (Package Machinery Co., Springfield, Mass.)

Compares taste of concentrated and normally processed milk

At the present time consumers prefer fresh milk to concentrated, unless savings of 2 or 3c a qt are possible, according to G. P. Gundlach & Co. Savings to cover the cost of concentration could conceivably be achieved where milk is imported from distant producing areas. Also, where milk is distributed from a central point throughout a radius of up to 100 miles.

Majority of opinions, according to the survey, is that when milk has been properly concentrated (at not too high a temperature) and reconstituted with cold water, it tastes essentially the same as when normally processed by pasteurizing and homogenizing. (G. P. Gundlach & Co., 1201 W. 8th St., Cincinnati, Ohio.)

Cherry supply for confectioners is plentiful

Cherry supply available to the candy industry is about the best ever experienced. Yields in the northern Michigan cherry country were particularly good this year. It is expected that the cherry supply will increase for the next several years because of the number of new orchards being planted.

Futuramic candy bar

A tailor-made candy bar, approximating a complete, well balanced diet can become a reality in the not-so-distant future, according to Paul Logue, a technical sales director for Monsanto Chemical Company. Based on the Army subsistence bar, it would be able to sustain life for long periods of time by providing essential nutrients.

Mr. Logue believes that if qualified scientists, chemists and food technologists directed their attention toward developing this type of product, it could be achieved. (As reported in MMR Flavor Pointer, Magnus, Maybee and Reynard, Inc., New York, N. Y.)

(Continued on third cover)

FOOD PROCESSING

(FOOD PROCESSING PREVIEW)

The News Magazine of
Processing Developments and Control

Vol. 12 October, 1951 No. 10

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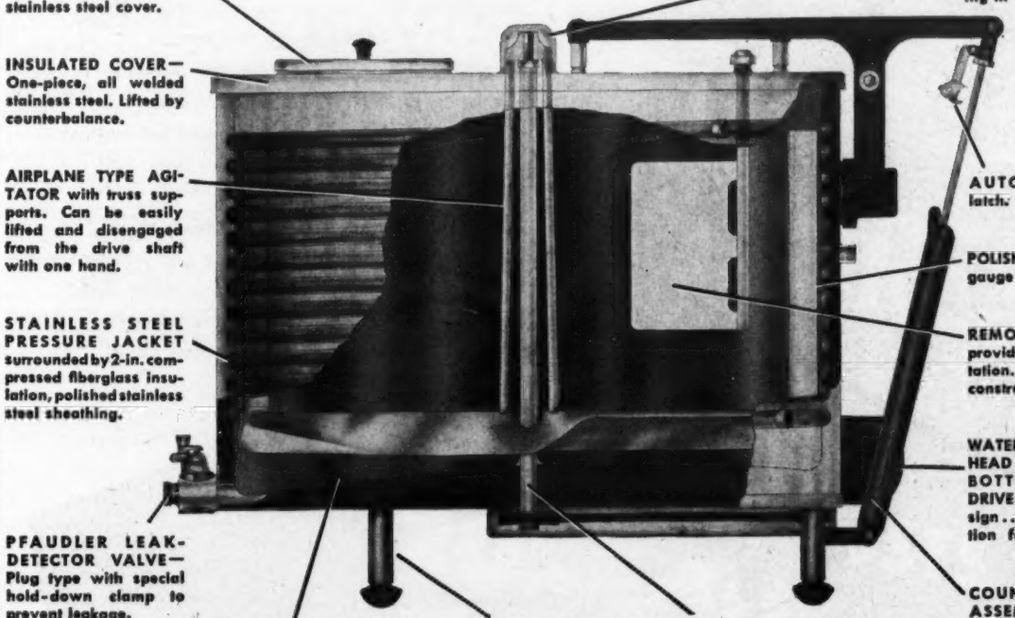
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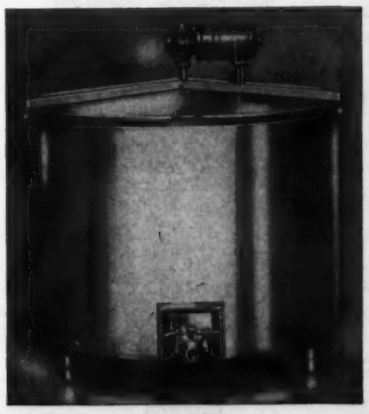

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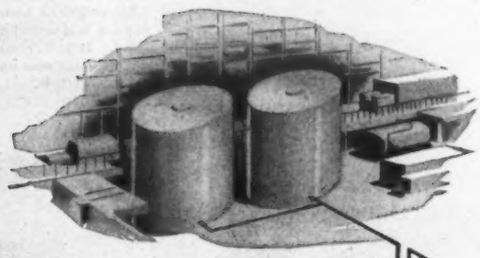

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HIGHLIGHTS

(*Continued from front cover*)

- One Operator Pushes Buttons to Assemble, Blend, and Pasteurize Ice Cream Mix for Continuous HTST Pasteurization 10
- Automatic Air Drying With Bushel-basket Size Machine Enables Basement Storage of Ingredients Such as Salt, Flour 12
- Built-in Scraper Cleans Strainer, Eliminating Shut-downs and Manual Cleaning 14
- Automatic Tagging and Counting Complete Mechanization of Wm. S. Schull's Tea Bagging Operation 20
- No Discoloration from Light Rays When Using Masking Boards to Pre-package Foods 20
- Lightweight Collapsible Container Insulates Frozen Foods for 15 Hours, Allows Shipping Without Refrigeration 23
- Eliminate Smear and Identification Damage on Printed Polyethylene Food Packages 25
- Nail Directly Into Steel Floor; All Metal Truck Body Is 500 lb Lighter 31
- Packages Turn Sharp Corners on Flexible Gravity Conveyor Without Side Rail Support 33
- Air Activation, Fluidizing Assure Rapid Flow of Bulk Material Through Pipe 39
- Chemical Additives and Contaminants; Hugh Craig Comments on Control of the Use of Chemicals in Food 40
- Two or Three Times the Pipe Footage per lb Obtained With Schedule 5 Stainless Steel Pipe 43
- Quickly Determine the Minimum Heat Treatment Required to Sterilize Foods 48
- Determines Average Temperature of Liquid Stored in Tanks Within ½°F in a Few Seconds 49
- Make On-the-spot pH Readings Anywhere with Pocket-size Meter and Probe Unit 52
- Filtration With Filter Aid Removes Emulsified Oil from Condensate for Return to Boilers of Hershey Chocolate Corporation 62
- Simple Design, Inexpensive Installation Featured in Chlorination Unit for Small System 66
- Completely Clean Air Comes from Filter Which Traps Yeasts, Fungi, and Spores 74

EDITORIAL CONTENTS

That's Interesting 2

Food News and Interpretations 6

Guest Editorial 8

New Solutions of Processing Problems — 4 actual "installation type" articles on "how it was done better" 10

Food Ingredients — 2 articles 16

Crop Production and Handling — 2 aids to quality control of raw products 18

Packaging — 16 examples of practical packaging operations that make for speed and economy 20

Material Handling — 11 articles on developments in handling 30

Ideas — 10 ideas gleaned from this or other industries that offer possibilities in food processing 40

Process Instrumentation — 8 reports on better process control through instruments 48

Briefs — 17 "quick looks" at interesting articles in contemporary publications 54

New Literature — 46 reviews of current literature describing process equipment and materials 56

Sanitation and Maintenance — 12 articles helpful to food-plant managers 62

Processing Equipment — 13 articles on developments in equipment to aid processing operations 70

Convention and Exhibit Schedule 80

Special Readers Service

1. Product Directory . . . "Quick-locator" of all types of materials, instruments, processing equipment . . . lists everything discussed in this issue, with page references 81

2. To get More Information on Products . . . see Readers Service Department Slip opposite page 2

3. To Subscribe to This Magazine . . . see Readers Service Department Slip opposite page 82

Advertisers in This Issue 82

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FOOD NEWS & Interpretations

Current Washington Activities Pertinent To Processing; Other News Developments

Packaging supply situation eases for several items

Paper containers for the most part are in fluid supply, a condition attributed by USDA experts to reduce demand for shipping cartons by consumer durable goods manufacturers. The quarter outlook for cereal packages is also good. Government reports reveal an overall softness in the demand for most types of food packaging papers with the exception of cellophane.

Cotton trade officials in the East predict that domestic cotton consumption for the coming year will fall short of last year's consumption by about 1 million bales. If true, this situation would mean adequate supplies of cotton sheetings for bags.

The burlap situation is easing and probably will continue that trend slowly. Indian government officials are now making inquiries of NPA officials regarding the burlap market here, indicating to US officials the possible removal of the Indian export tax or at least an easing of it.

Metal containers will probably be available up to the percentages alloted to canners. Adoption of an annual basis meets the general approval of the industry.

NPA's fourth quarter outlook in food machinery field

Fourth quarter outlook as reported by NPA officials in the food machinery field indicates that requests by machinery and equipment manufacturers for supplies of critical materials will be cut back about forty per cent. Strange as it may seem, this condition does not appear to inflict any considerable set back to delivery of manufactured goods to the processing industries.

The squeeze on food machinery and equipment manufacturers probably will not be abated until some time next year. The pinch may come at the close of this year. According to trade sources as well as NPA officials, few if any complaints have been received over the inability of food processors to obtain equipment.

The Controlled Materials Plan bookkeeping system has not functioned at its expected level of efficiency, a condition charged to overprogramming prior to its inception. Observers of the NPA operations says that prior to the start of CMP, the defense agencies had alloted strategic materials to such programs as freight cars, barge building, and to more than three thousands short term amortization projects connected with defense work far in excess of the overall supply.

To remedy this condition, NPA has sharply cut back distribution of steel, aluminum and copper to consumer durable goods for the October-December quarter. It is hoped that the saving of materials which would go to the consumer durable goods field may help to balance out available materials to the direct defense programs and such essential industries as the food machinery field. This at best is a hope. With a considerable part of the new

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DIAMOND CRYSTAL Antioxidant SALT

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defense plants built or about ready to operate, the impact of demand for steel, copper, and aluminum for these plant operations is likely to erase any savings in critical materials resulting from the cut back in consumer durables.

Corn syrup vs cane syrup again an issue in FDA standards

Under the proposed amendment to the standard of identity for preserves only 25% of the sugar content may be corn syrup, but no declaration of the presence of corn syrup is required on the label. By this action FDA brings the labeling requirements for preserves in line with canned fruits, where corn syrup has been used as part of the sugar content.

At the present time syrup content of preserves might contain as much as 50% corn syrup, but this addition required that the label note the presence of corn syrup and its amount. Proponents of the change, the National Preservers Association, held that this labeling requirement implied that corn syrup was an inferior component of the syrup content.

Preserves sweetened wholly with sucrose are considered sweeter than those prepared with partial replacements. These were findings of a trained flavor panel in studies conducted by scientists of Arthur D. Little, Inc., on a research project sponsored by Sugar Information, Inc. In general, their findings showed that when quality of fruit notes and intensity of sweet and sour notes are the bases of differentiation, all-sucrose preserves are sweeter, less sour, and less bitter.

On the other hand, the National Preservers Association after making exhaustive commercial size tests on all varieties of preserves and jellies, maintains that use of a substitute sweetener may well show an advantage, since some consumers criticize all sucrose preserves as being too sweet to carry the optimum flavor of the fruit from which it is made. In addition, some varieties showed an improved color with corn syrup addition, and a distinct advantage in preventing sucrose crystallization in the preserves.

It is the contention of the preservers, however, that from the standpoint of the consumer, preserves made with 25% sucrose replacement by corn syrup will be indistinguishable from the 100% sucrose product.

Exceptions to the proposed amendment have been filed by the sugar industry. FDA officials say these exceptions are aimed at the emphasis FDA has given to the testimony regarding the elimination of the labeling requirement showing the presence of corn syrup in preserves.

Trend towards broader use of imitation labeling

FDA officials report a trend toward a broader use of imitation products, particularly in institutional trade, where the economic advantage is clearer and the substitution is not readily detected. Use of imitation chocolate in which cheaper fats are substitutes for the cocoa butterfat has been uncovered recently.

If these minor trends spread, all standards of identity which have been established will be endangered, according to officials of the FDA. These government officials also report that they are being urged by responsible industry leaders to move speedily to halt spread of imitation food products; however, they cannot see a clear avenue of action at this time.

Food processors are invited to voice their views on im-

(*Continued on page* 80)

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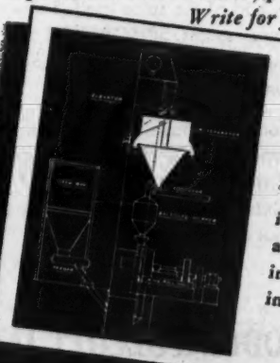

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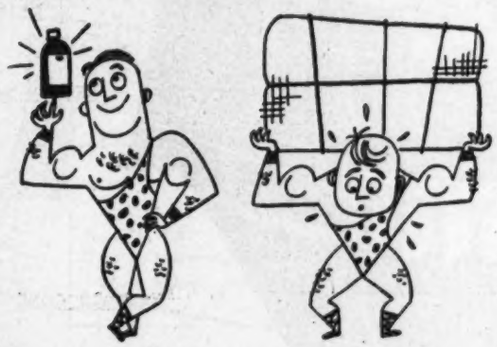

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ALBERT R. FLEISCHMANN

Vice President and General Sales Manager Standard Brands Inc.

For 35 years, Albert R. Fleischmann, has been observing the important role which both "pure" and "industrial" research has eventually played in food production. In his numerous executive positions first with The Fleischmann Company, later when it merged with Royal Baking Powder Company and Chase and Sanborn to form Standard Brands Inc., he fostered an extensive research program. It is now centered in the impressive Fleischmann Laboratories in New York in addition to research fellowships granted to universities and collaboration with many government agencies.

He continually evaluates research to industry by being active in trade associations, appearing on convention programs of the Baking and Hotel Restaurant Industries and coming in intimate contact with food processors. He was formerly vice-president of the American Society of Bakery Engineers and president of The Allied Trades of the Baking Industry.

As a businessman I am vaguely conscious of the fact that there may appear to be a sort of running battle in some scientific and industrial circles on the subject of "pure" or "basic" or "fundamental" research versus "applied" or "industrial" research. But when we review the perfect cooperation and the end result of all these types of research in the bread enrichment story, I think we can agree that there is no real conflict between any of them.

As I see it, "pure" or "fundamental" research is needed at all times and in all types of research centers to supply the vital lifeblood of new ideas and abstract concepts. Applied research is equally needed to channel those ideas towards the realization of a predetermined goal. . . to arrive at a point where it becomes apparent that it is possible to translate the new idea into a practical blueprint for a new product or a better product. And finally, there is the development phase of research where industry "know-how" collaborates with science to demonstrate that what research has proved to be possible, is also practical for production and use.

Today our store of basic scientific knowledge has become so vast and complex — and the avenues for research are opening up so fast — that both individual and specialized industrial research must call upon the facilities of *all* our sources and centers of scientific knowledge. . . . .the great universities — the laboratories of individual businesses and cooperative industry association centers.

In regard to the growing cost of research there is no doubt that business management can contribute a great deal towards a planned and systematic program that will avoid duplication and, as far as possible, profitless blind alleys. Yet, in this latter respect, business management must proceed with the greatest caution. For who is to say which alleys are blind and which are not? Often the so-called negative and unexpected findings of the research worker open up new and valuable fields well worthy of further exploration. In other words, the research scientist must necessarily be allowed more latitude than the production engineer or the salesman. For

(*Continued on page* 17)

The Better, Simpler Way **to COOL JUICES!**

...with the *continuous flow—no lag or surge of product!*

If you process juice—*apple, cherry, citrus, tomato, vegetable or any other kind*—the stainless steel CP Multi-Pass can help you do it with real savings. Its *smaller plate*—stainless steel and perfectly smooth for quick, easy cleaning—insures fast, effective heat exchange—gives you *better* performance with a *smaller*, space-saving unit.

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When inquiring check FP 2325 on handy form, pgs. 2-3

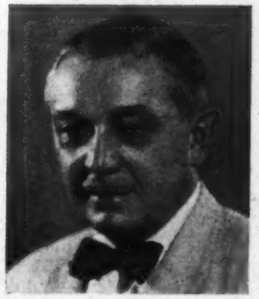
Putman Publishing Company Establishes THE FOOD PROCESSING FELLOWSHIP

at Illinois Institute of Technology

Promote development of engineering sciences for the food industry

Harry McCormack, Author of THE FOOD PROCESSING FELLOWSHIP, Professor Emeritus of Illinois Institute of Technology, where he served for 42 years (Director of its Department of Chemical Engineering for 38 years), Technical Consultant and Advisor to Putman Publishing Company from its first year

Russell L. Putman, President of Putman Publishing Company, founders of THE FOOD PROCESSING FELLOWSHIP as a tribute to Professor Harry McCormack



☆

GRANTS of $2000 a year have been established by Putman Publishing Company, publishers of FOOD PROCESSING magazine, to advance the sciences in the processing of foods. This program takes the form of fellowships giving unprecedented opportunity for our best young research minds graduating from colleges all over the country to engage in advanced study and conduct research projects contributing directly to the development of food engineering as a science and as a profession.

The first fellowship provides for one year of graduate study at Illinois Institute of Technology, leading to the Master of Science degree in food engineering. This initial year will look toward establishing fellowships for three years of graduate study leading to a Doctorate.

Illinois Institute of Technology has selected as the 1951-1952 Fellow for THE FOOD PROCESSING FELLOWSHIP, Daniel J. Heald, of Lowell, Massachusetts, graduate of Purdue University with Bachelor of Science degree, June 1950.

This fellowship is the first and only one of its kind ever established in the first course in food engineering ever offered by any institution. The new educational program at Illinois Institute of Technology was developed by Professor Milton E. Parker, Director of Food Engineering, with the advice and counsel of the IIT Food Technology Council. Prominent leaders with executive, managerial, and research experience in major food companies compose this council as shown in the list of members below. Objective of their educational program is to train and provide

(*Continued on page* 17)

The I.I.T. Food Technology Council

Advisory Board to Professor M. E. Parker, Director of Food Engineering

Roy C. Newton, Vice President, Swift & Company, Chairman of Council

Victor Conquest, Vice President, Armour & Company, Vice Chairman of Council

F. C. Buzzelle, Products Control Executive, General Mills, Inc.

Berton S. Clark, Director of Research, American Can Company

George A. Crapple, Director of Research, Wilson & Co., Inc.

H. C. Diehl, Director, The Refrigeration Research Foundation, Inc.

Albert E. Elder, Director of Research, Corn Products Refining Co.

Alexander Frieden, Research Director, Pabst Brewing Co.

George F. Garnatz, Director, Kroger Food Foundation

Philip P. Gott, President, National Confectioners' Assn.

Charles E. Gross, Director of Scientific Research, John Morrell & Co.

Lloyd A. Hall, Technical Director, The Griffith Laboratories, Inc.

Rohland A. Isker, Secretary, Research and Development Associates, Food & Container Institute

George Kanberg, Superintendent, Dining Service, United Air Lines

William G. Karnes, Vice President, Beatrice Foods Co.

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Norman H. Kraft, Vice President, Kraft Foods Co.

Henry R. Kraybill, Director, Department of Scientific Research, American Meat Institute

Francis H. Kullman, Jr., Vice President, Bowman Dairy Co.

Frank K. Lawler, Editor, "Food Engineering"

Paul P. Logan, Director Food and Engineering Research, National Restaurant Assn.

Harry McCormack, Senior Technical Editor, Putman Publications, Consultant to Leading Manufacturers

Paul D. V. Manning, Vice President, International Minerals & Chemical Corp.

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When you can make
better food products at less cost—

YOU POCKET THE DIFFERENCE!

Adds up, doesn't it? And General Mills' new PAYGEL—a *wheat* starch—gives you *superior* products with *less trouble—less cost!* Here's why:

1. Paygel costs compare favorably with imported root starches, and it provides a dependable domestic supply.
2. Paygel does a remarkable job as a fat (emulsion) stabilizer during critical production phases of specialty canned foods such as chili, soups, etc.
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For gum candies use *General Mills B-2455*, another fine *wheat* starch. Highly purified and modified, this starch has a *thin-boiling* characteristic.

Free samples of Paygel and B-2455 are yours without obligation. Discover how these *wheat* starches can increase *your* profits. Write or wire—

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When inquiring check FP 2326 on handy form, pgs. 2-3

New Solutions
OF PROCESSING PROBLEMS

One Operator Pushes Buttons to Assemble, Blend, and Pasteurize Ice Cream Mix

Continuous HTST pasteurization improves quality control; recovery of heat feature saves steam and cooling water

R. G. Thoke, Zone 10 Production Manager, and R. H. Trinkle, Zone 10 Engineer of Construction for National Dairy Products Company, Inc., engineered the development described here

Fig. 1. View of the weigh can showing the paddle-type mixer

Fig. 2 Close-up of the push-button panel at the weighing station

PROBLEM: When Luick Ice Cream Company of Milwaukee built its modern plant, the firm had to arrange assembly and mixing of ingredients so the new continuous pasteurizer system would be supplied with 1500 gallons of mix per hour. In its old plant the operation was batchwise; cans of cream were dumped into tanks manually along with other ingredients.

Solution: Weighing and mixing of ingredients are still done batchwise, but they have been made semi-automatic. Sugar is handled in liquid form; cream is received in tank trucks or cans which are dumped when received and from then on handled by pumping. The three major liquid ingredients used in assembling the mix are contained in vertical tanks as shown in the diagram; two for liquid sugar, two for cream, and two for condensed skim.

These liquid ingredients are fed cold (temperature of final mix is 45 to 50°F) to a 500 gallon weigh can by positive pumps under control of the operator when standing in front of the weigh can scale. Note the push-button control station adjacent to the weigh can as shown in the cover photo. A close-up of this push-button panel is shown in Fig. 1. Design capacity of the mixing station

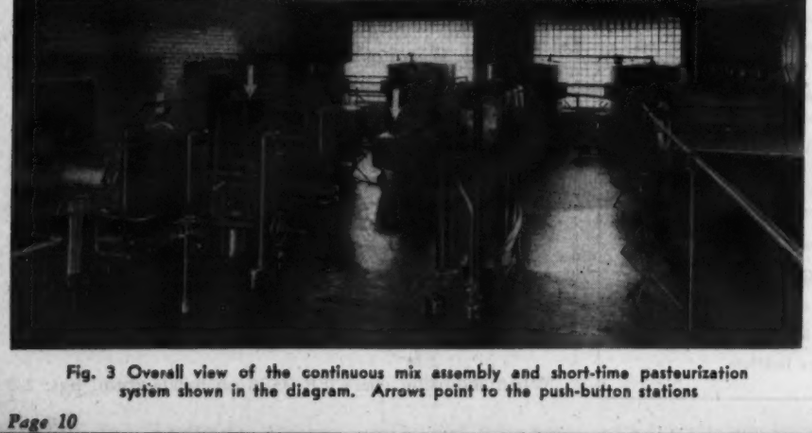
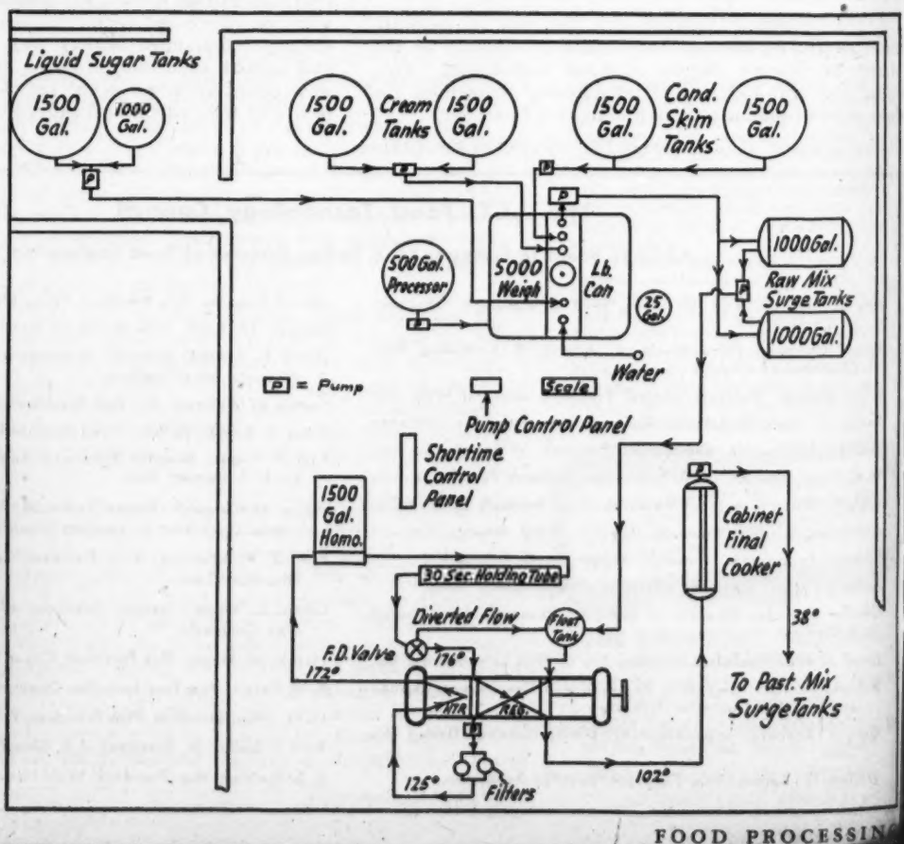


Fig. 3 Overall view of the continuous mix assembly and short-time pasteurization system shown in the diagram. Arrows point to the push-button stations



is 3000 gallons per hour, twice that of the continuous pasteurizer, so the same operator has time available for the simple operations required in setting the HTST pasteurizer in operation.

Cream, condensed milk, liquid sugar, and water are added according to weight formulas. (Water is available from line, and is shut on and off by a switch which controls a valve.) Scale is marked in 5-lb graduations and can be read to the nearest 2 lb. Thus if 1084 lb of cream are specified for a mix, accuracy of fill is 1084 plus or minus 2 lb.

Only ingredient which is not added by push-button control is the stabilizer. This is mixed with water until it dissolves in the 25-gallon portable tank which appears to the left of the weigh can on the photos and diagram, and is then dumped into the weigh can.

After the mix is assembled and blended by the action of the paddle-type agitator, it is pumped to two cold-wall surge tanks, each of 1000 gallon capacity. Mix is sucked up out of the vat by a loop of pipe extending down into a sump (see arrow in Fig. 2) so that there is no connection to the weigh can which might affect the weighing system.

As soon as a supply of cold mix is in the surge tanks, the operator moves over to another push-button control station located on the short-time control panel (see diagram) and sets the pasteurizer in operation. A non-positive delivery pump pumps the cold mix to the float tank. From here it is sucked through the heat regenerator by the timing pump and is heated up to 125°F by the pasteurized product. Next it is strained through two filter screens and then heated to 172°F. (The homogenizer adds about 4 degrees of heat so that the holding temperature is 176°F, a degree higher than the 175°F required by the health authorities.)

From the heater the mix enters the homogenizers where it is homogenized at 2000 pounds pressure in the first stage and 500 pounds in the second. These pressure settings can be varied to give the viscosity desired in the cooled pasteurized mix. After leaving the homogenizer the mix enters a 30-second high velocity holding tube, passes through the flow diversion valve, and then is cooled to 102°F in the regenerator section by the raw cold mix. Final cooling of mix occurs in a direct expansion cabinet cooler, although another plate cooler section could have been used. Mix now at 38°F is pumped to cold-wall surge tanks just ahead of the freezers.

Results: It takes less than 10 minutes to assemble a 4500 lb batch, that is, 500 gallons of mix and pump it to the raw mix surge tanks. Only one man is needed to assemble and pasteurize the mix, whereas previously it took three.

Control over ingredients is much more positive. Whereas previously inventory of raw materials was difficult to maintain, it has become a simple matter of subtracting the amounts specified for the days run from the amounts charged to storage.

Being a closed system, continuous short-time pasteurization has increased the degree of sanitation; however, an additional 20% wash-up time is required. This slight disadvantage is more than compensated for by the savings realized in the regenerative heating. Using the hot pasteurized mix to preheat the cold raw mix recovers 60 to 65% of the heat and amounts to a considerable saving in fuel as well as cooling water.

Source: HTST pasteurization system was designed and installed by Cherry Burrell Corp., 427 W. Randolph St., Chicago 6, Ill. . . . or for more information check FP 2327 on handy form, pages 2 and 3.

• *"you name it... I helped make it!"*

Glue for toasted labels

Something quite new again. A heat-sealing glue! That lets bottle labeling machines run 2 to 3 times faster. It works like this: Glue is applied and dried on the back of labels before they are printed. The label is heated in the bottling machine to make the glue tacky. The label is placed against the bottle. Held firmly in place. The glue cools. And the label is locked tight to the bottle. All, automatically. In a flash!

. . . and we're finding new uses for heat-sealing every day.

•*"you name it . . . I helped make it!"* Look at military C-Rations. You'll see heat-sealed closures on glassine bags. On foil packets of sugar, salt, concentrates. Look around the house. You'll see heat-sealed cardboard cereal, pudding packages. Even cloth-to-metal jewelry boxes, eyeglass cases. The NATIONAL touch is everywhere. Glue applied through imaginative research and service. To every item of defense and daily life.

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Versatile Laminating (RESYN) Adhesives

A single series of adhesives can handle any or all of these laminations, including those required in various U. S. GOVERNMENT SPECIFICATIONS.

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When inquiring check FP 2328 on handy form, pgs. 2-3

Will YOU be one of the next Canners to Get the Outstanding Advantages of Aseptic Canning?

Andersen's Pea Soup is the first nationally distributed product that is canned with the Martin Aseptic Canning System. Mr. Andersen says: "We picked the Martin System because, in our opinion, it is the only method that retains the natural flavor and color of the all-vegetable split pea soup *on which our reputation is based.*" After unsuccessfully trying to can the soup and retain flavor with conventional canning methods for a period of ten years, the Martin System produced the answer and these additional features:

Retains Flavor, Color and Consistency while Eliminating Exhausting, Retorting and Cooling . . . .

In addition to the above, the Martin System is inexpensive to install and, in many cases, can be operated by only one man. The expense of distribution of frozen products can practically be eliminated. What to can with the Martin AsepticCanningSystem is answered in the booklet offered. One of our Engineer-Technicians will be glad to discuss the possibilities of adapting the Martin System to your product. There is no obligation for this service.

FREE ADDITIONAL DATA . . . is contained in this folder. Write for your copy today. Ask for bulletin P-1051.

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PROCESS EQUIPMENT DIVISION 810 SOUTH WATER STREET, ROCKFORD, ILL.

NOTE: As sole Sales Agents for the Martin Aseptic Canning System, we are pleased to announce that this outstanding canning method has been accepted and approved by the State Board of Health of California.

Other BARNES Processing Equipment

Glass handling machines
Automatic retort basket loaders and unloaders
Special conveyors
Tray loader
Pallet unloader
Carton uncaser

When inquiring check FP 2329 on handy form, pgs. 2-3

Automatic Air Drying Enables Basement Storage of Ingredients

Baker stores salt, sugar, flour safely in 20,000 cubic foot room after bushel-basket size machine removes moisture

« Small drier (upper center) conditions air, so Becker Pretzel Co. can use this sub-basement for ingredient storage

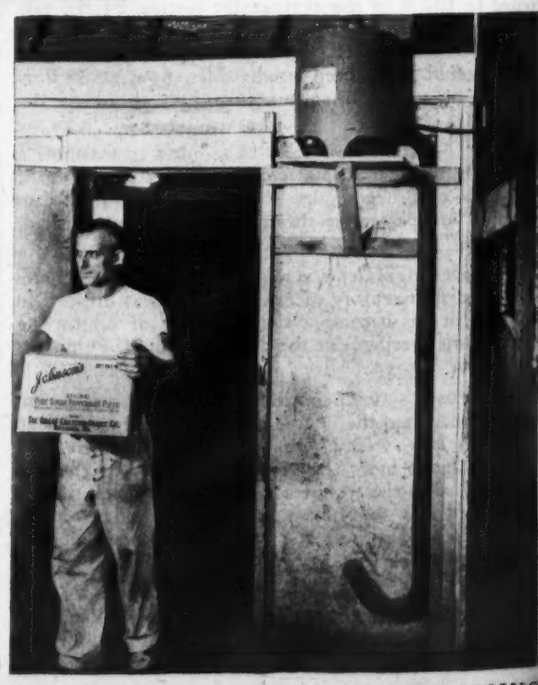
In place of securing additional air-conditioning tonnage needed during summer operations to control humidity, an air drier was installed at this candy plant »

PROBLEM: Becker Pretzel Co., Baltimore, Md., investigated the possibility of storing salt, sugar and flour on a concrete floor of a brick-walled sub-basement. It was discovered that during summer months, high air humidity caused condensation along the relatively cooler walls and ceiling, resulting in water dripping and eventually forming puddles.

Solution: Becker's found that humidity was controlled and condensation eliminated after placing in operation two compact adsorption type air driers in this sub-basement. Each drier is smaller than a bushel basket, allowing placement anywhere in a room, and is automatic in operation. Each will handle about 10,000 cubic feet of air.

To operate, the unit draws air from the basement through the humid air intake and dust filter. A fan forces this humid dust-free air down through a filter which adsorbs moisture. Then the dried air is discharged through the dry air outlet into the room at a relative humidity of 5%. Humidity is lowered to a predetermined point and held constant at that level by setting the humidistat. After 2½ hours on adsorption, chemicals in the moisture filter are regenerated. The fan remains on and a valve mechanism closes the dry air outlet and opens the moisture outlet. An 800 watt electric element heats the saturated chemicals to evaporate the moisture. This is blown, in vapor form, through the moisture outlet and exhausted outside the basement. Drying cycle (30 min) is controlled by an electric timer.

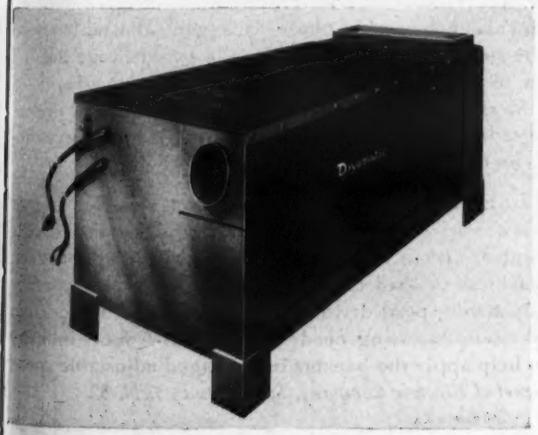
Storage area is kept as tight as possible to avoid entrance of additional moist



air. Walls and ceilings have several coats of a varnish base aluminum paint. Windows and doors are weather-stripped and all cracks are sealed.

Results: Three weeks after initial installation, the area was completely free of moisture and no further condensation was observed. Two driers maintained a

Diagram of Dryomatic Model 25



Larger drier, model 100, measures 45 x 19 x 16 inches and handles 25,000 cu ft room with a three-set moisture adsorbing system—2 sets are always on drying cycle as one is regenerating

humidity of less than 50% which is a safe level to prevent rust and mold formation. All ingredients were safely stored in the sub-basement.

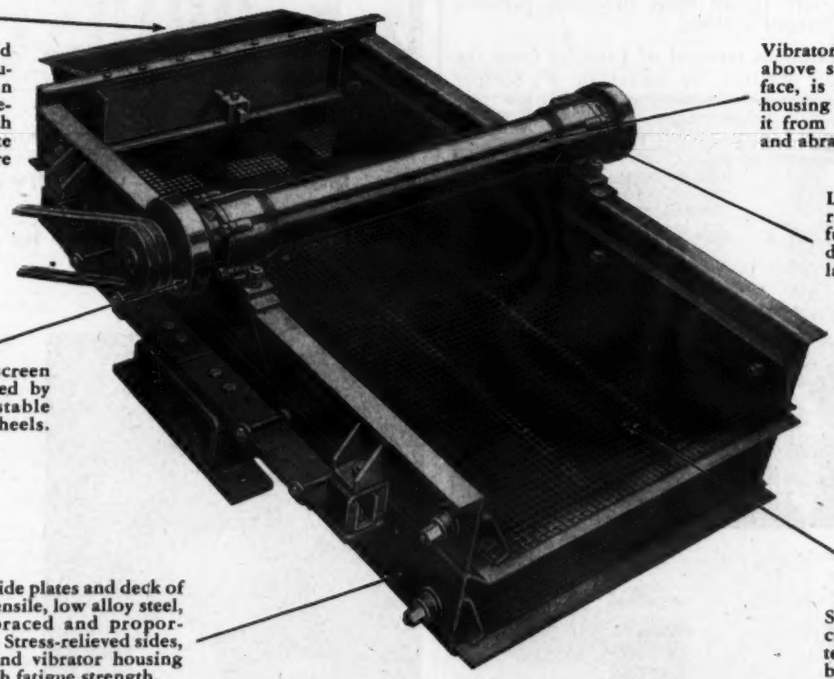
Operation is entirely automatic; no buckets to empty, no chemicals to change.

Source: Unit described and shown is Dryomatic drier Model 25, manufactured by Dryomatic Corp., Dept. FP, P.O. Box 334, Alexandria, Va. . . . or for more information check FP 2330 on handy form, pages 2 & 3.

● Accurate sizing...
● High capacity...
● Low operating costs...

YOU GET ALL 3

with LINK-BELT "UP" Vibrating Screens



Vibrating feed hopper and regulating gate can be supplied to reduce screen cloth wear, distribute feed over entire deck width.

Vibrator, located well above screening surface, is in heavy steel housing which protects it from dust, moisture and abrasion.

Liberal self-aligning roller bearings are further guarded from dirt and moisture by labyrinth seals.

Amplitude of screen is easily changed by resetting adjustable unbalancing wheels.

Main side plates and deck of high-tensile, low alloy steel, well braced and proportioned. Stress-relieved sides, deck and vibrator housing for high fatigue strength.

Screen cloth is securely clamped and tensioned over rubber covered, cambered deck structure.

YES, the efficient two-bearing operation of Link-Belt "UP" Vibrating Screens offers real economies in the screening of fine, light materials. Positive, high-frequency action of the vibrator mechanism provides quick bed stratification . . . maximum sizing opportunity for every particle. Blinding, even on the smallest cloth sizes, is virtually eliminated.

And you'll like the lower power and maintenance costs, thanks to two-bearing simplicity.

If you're faced with a screening problem, call the Link-Belt office near you. One of our screening experts may be able to offer you a money-saving answer.

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LINK-BELT COMPANY—Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices in principal cities. 12,498

When inquiring check FP 2331 on handy form, pgs. 2-3

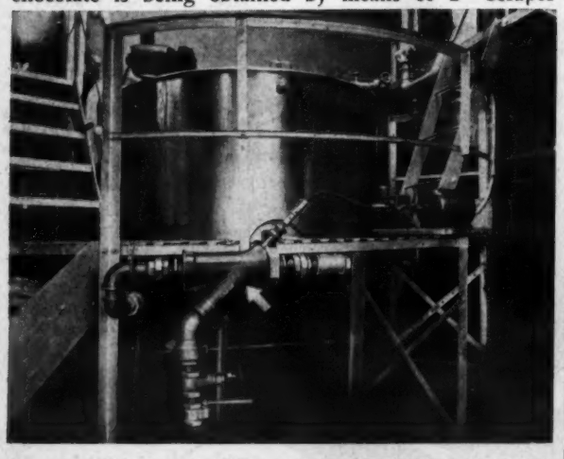
Built-in scraper cleans strainer, eliminating shut-downs and manual cleaning . . .

continuous action of motor-driven blade enables use of closer mesh screen

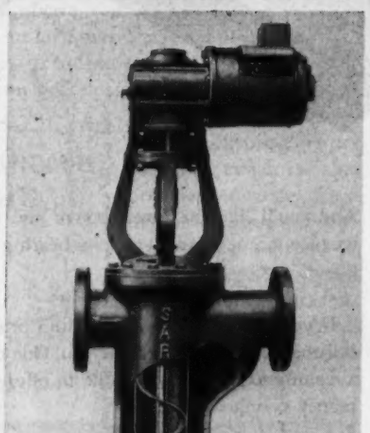
Problem: It was necessary to stop production at the H. Fox Company, Inc., Brooklyn, when strainers in the chocolate syrup lines became clogged with hardened syrup particles. Excessive loss of production was accompanied by wasted man hours required to remove and clean screens.

Cleaned screens filled-in rapidly after being put back in use, and then restricted flow through the line. Resulting back pressure forced some hardened particles through the overloaded screens.

Solution: Continuous removal of particles from the chocolate is being obtained by means of 2" Scraper



Arrow points to Scraper Strainer installed in a chocolate syrup pipe line leading from the cooking kettle to the bottling department



Motor-driven scraper blade rotates like a worm gear to continuously clean screen without interrupting flow

Strainers. As shown in the photo, a scraper blade inside the cylindrical screen of each strainer rotates like a worm gear and scrapes off the hard chocolate particles while syrup flows through the strainer screen. These strainers, in sizes from ¾ to 8", are also being used with molasses, syrups, fruit juices, brine, fuel oil, etc. A brush scraper is furnished when the solution to be strained forms a scum. Strainers can be adjusted not only to strain foreign particles, but also to break-up and homogenize small masses of materials.

Results: Continuous, automatic cleaning of screens

Gets fast, accurate feeding and blending control with G-E adjustable-speed drives

General Mills' G-E Thy-mo-trol* drives in new flour milling plant adjust flour flow to the capacities of succeeding equipment

For blending or adjusting flow at this plant, taper screw feeders, accurately governed by the speed of G-E Thy-mo-trol drive motors, take just the right amount of flour from overhead bins, feed it down to gather-up conveyors.

Regulating the flow of flour to the packer and the proportional blending of many different varieties of flour—to meet customers' specifications exactly—is an easy matter with General Elecrtic Thy-mo-trol drives at the new Sperry Division flour-milling plant of General Mills at Vernon, California. Fourteen of these packaged adjustable-speed drives provide the close speed control and wide speed range needed to adjust the flow of material to succeeding machine capacities or to assure precisely the right mix every time in blending—without under-grading or over-grading of blends. Result: substantial savings in processing time and costs.

Thy-mo-trol—most accurate, most versatile, and fastest-acting of G-E's adjustable-speed drives—can provide literally thousands of speeds over a range as high as 100 to 1, holds set speed to within 0.5 per cent, if necessary, regardless of load changes. And it's only one of many G-E packaged adjustable-speed drives from which you can choose to meet your every food-processing need. Ask your G-E food industry representative to help apply the benefits of packaged adjustable speed to your plant. *General Electric Company, Schenectady 5, N. Y.*

*Registered trade-mark of General Electric Co.

ADJUSTABLE-SPEED DRIVES
for food processing

USE THIS GUIDE TO THE RIGHT DRIVE!

Here's a comprehensive 26-page illustrated manual that tells all about adjustable-speed drives—their advantages, their operation, and how to select the right drive for your food processing needs. It's yours for the asking—Bulletin GEA-5334. Send, too, for Bulletin GEA-5337, describing Thy-mo-trol drives in full.

without interruption to flow has eliminated shut-downs with their loss of production and wasted labor.

This cleaning action also makes it possible to use a closer mesh screen for removal of smaller particles and eliminates the hazard of particles forced through screen.

Source: Scraper Strainers are made by Sarco, Inc., Dept. FP, Empire State Bldg., New York 1, N. Y. : . . or for more information check FP 2333 on handy form, pages 2 and 3.

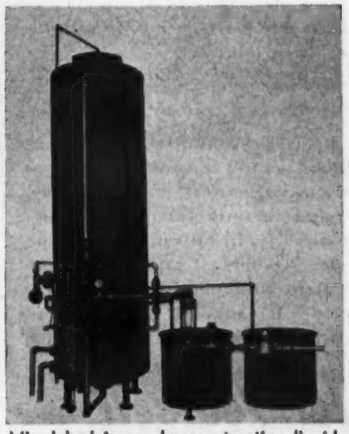
Beet yard molasses treated by ion exchange becomes refined syrup . . .

process brings in substantial profits by producing material for confection makers, dairies

Problem: Layton Sugar Co., Layton, Utah, sold their beet yard molasses, both straight and from the Steffens process, as livestock feed. When sold in this form, it did not bring the price that it would if it were refined and sold as a food for human consumption. Selling the product in this way would also avoid price fluctuations.

Beet yard molasses is very viscous and is generally in the neighborhood of 80 brix, has almost 50% total sugars and about 10% mineral ash, the rest being organic constituents. It is highly colored, and has a strong, objectionable earthy odor and taste.

Solution: An ion exchange installation was constructed, consisting of one primary unit and two secondary units. Each unit consists of a cation exchanger, an anion exchanger, and a vessel containing a color adsorbent. The installation produces about 3 or 4 tons of 70 brix syrup per 24-hr day.



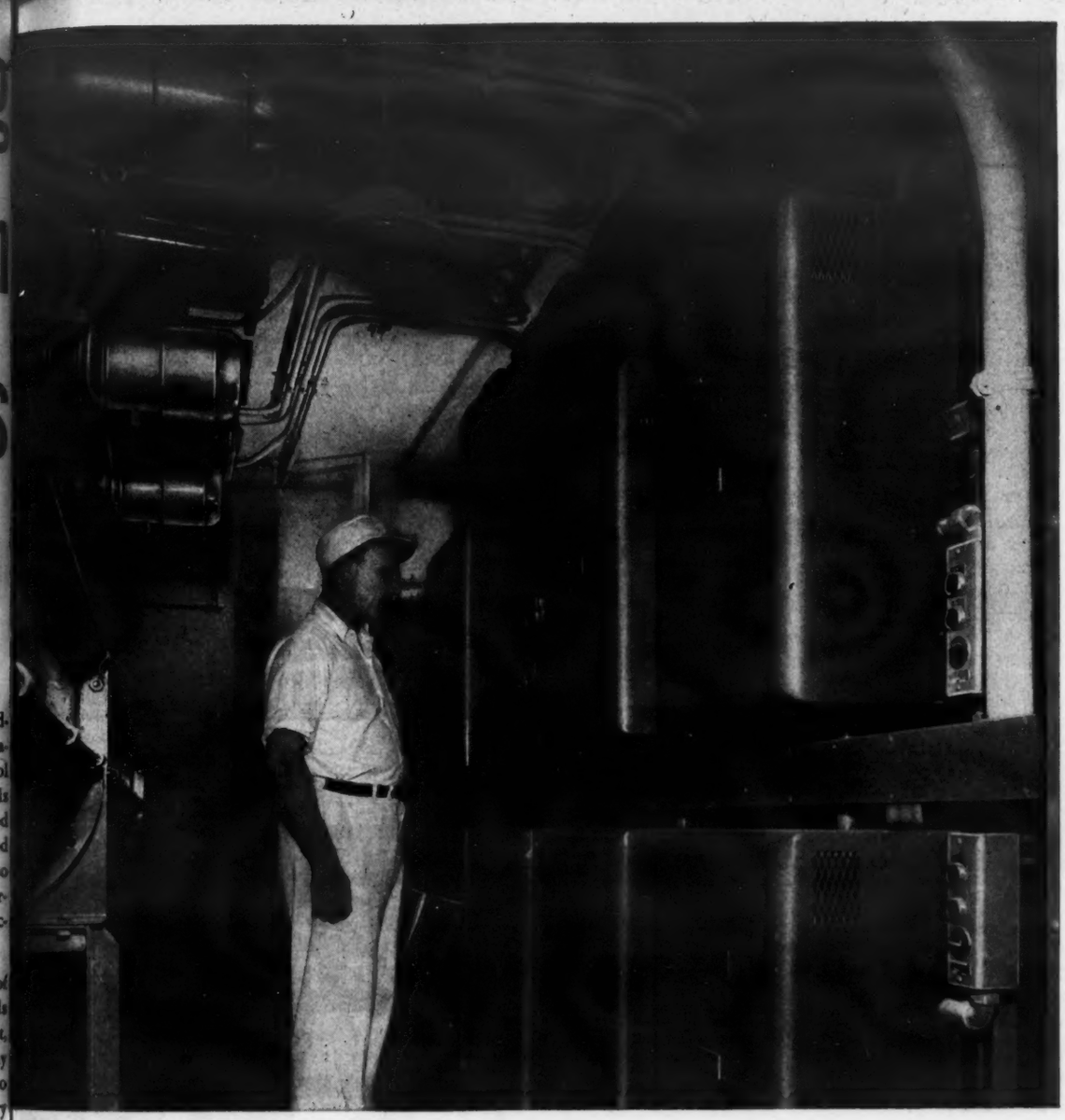
Mixed bed ion exchanger treating liquid sugar in an eastern refinery

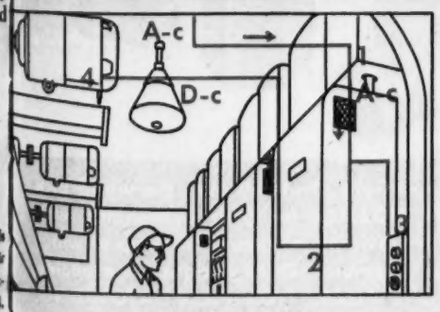
Prior to treatment, the molasses is diluted to 30-35 brix with water, producing a dark brown solution of a reduced viscosity that is suitable for treatment. This dilute liquid is passed through the primary color adsorbent, cation exchanger, and anion exchanger, removing 85 to 90% of the ash and producing a light brown material containing about 100 grains per gallon ionized solids plus the sugar.

The primary-treated material is stored and then pumped through a secondary unit where it receives the same treatment. Effluent is about 10 to 15 brix (due to inherent dilution in ion exchange), is water-white and relatively free from ash. Evaporation to 70 brix produces a light yellow syrup (about 50% transmission @ 410 mu) with less than 0.1% ash.

Results: Refined syrup offers a substantial profit and is ideal for candy manufacturers, ice cream makers, dairies, etc. It can be sold at a uniform price.

Source: Illinois Water Treatment Co., Dept. FP, 899 Cedar St., Rockford, Ill. . . . or for more information check FP 2334 on handy form, pages 2 and 3.





How Thy-mo-trol drive works. Diagram of a typical G-E Thy-mo-trol drive at the General Mills plant shows how a-c power is first brought to utilization voltage at a dry-type transformer (1) and then goes to the rectifier panel and "brain" (2). Here it is electronically converted to d-c and controlled from an operator's station (3) containing start and stop push buttons and speed-setting dial. D-c power is then delivered under precise electronic control to the d-c motors (4) driving the feeders (latter shown partially at left). Easy to install, operate, and maintain, Thy-mo-trol drives assure food plants the cost-cutting benefits of adjustable speed even under the most exacting conditions.

GENERAL ELECTRIC

When inquiring check FP 2332 on handy form, pgs. 2-3

FOAM'S A FRAUD . . . KILL IT WITH

DOW CORNING ANTIFOAM A

One part per million of Dow Corning Antifoam A kills foam during caustic soda concentration . . .

One part per million kills foam during synthetic varnish resin processing . . .

As little as 0.03 parts per million kills foam during tar evaporation . . .

And just three parts per million kills foam during strawberry jam concentration.

Odorless, tasteless, and relatively inert physiologically, Dow Corning Antifoam A is effective in a wider variety of foamers than any other material known—and in only trace quantities. Easy to introduce directly, in solvent solution, or even mixed with dry powders, it rapidly liquefies even the most violent and persistent foamers. That kind of efficiency has made it the most economical as well as the most versatile defoamer on the market.

See for Yourself

Send COUPON Today for Your FREE SAMPLE

DOW CORNING SILICONES

Dow Corning Corporation
Dept. BH-10
Midland, Michigan
Please send full information and a free sample of Dow Corning Antifoam A.

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ADDRESS_____
CITY_____ ZONE_____ STATE_____

DOW CORNING CORPORATION
MIDLAND, MICHIGAN
ATLANTA • CHICAGO • CLEVELAND • DALLAS • LOS ANGELES • NEW YORK • WASHINGTON, D.C.

When inquiring check FP 2335 on handy form, pgs. 2-3

Food Ingredients

Provides secondary color blends to intensify food appeal . . .

colors practical for confectionery, bottling, baking lines, have FDA certification

Uses: For improving and holding color during confectionery, bottling and baking operations.

Features: Secondary colors are a more economical method of achieving color in foods than mixing primary colors.

Description: The following blends are available: Bakers red, bottlers red, bottlers cola, casing red, cherry, deep red, raspberry, strawberry, orange, bakers yellow, egg yellow, lemon, bottlers lime, lime, light green, dark green, grape, caramel and chocolate. These are in addition to the firm's 18 primary colors.

The blends come in 1, 5 and 25 lb metal containers and meet the requirements of FDA.

Source: Secondary blends of Parakeet brand FD & C Certified Coal Tar Colors are distributed by Sterwin Chemicals, Inc., Dept. FP, 1450 Broadway, New York 18, N. Y. . . . or for more information check FP 2336 on handy form, pages 2 and 3.

Ground coffee brewed like tea when packed in porous cellulose bags . . .

begin licensing established firms to package regular roasted coffee in one cup bags

Uses: To prepare a beverage from ground coffee as conveniently as from tea leaves when packaged in individual bags.

Features: Coffee is packed in non-woven, highly porous cellulose bag, which does not distort natural flavors.

Description: Roasted, ground coffee is automatically measured and sealed into individual coffee bags, and dispensed for automatic packing into vacuum jars, tins or plastic bags. The coffee is not changed in any manner before packaging and type of grind is choice of the packer.

Source: Licensing established coffee packers to use this cellulose bag is directed by Cup Brew Coffee Bag Co., Dept. FP, 1715 Logan St., Denver, Colorado . . . or for more information check FP 2337 on handy form, pages 2 and 3.

Riboflavin's role as ingredient in commercial feeds

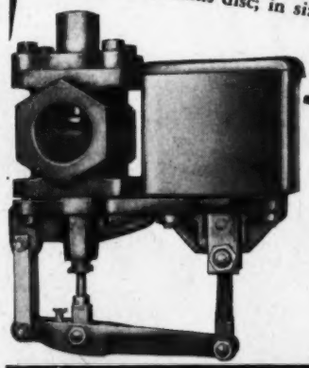
Need for riboflavin in preparing commercial animal feeds is detailed in 26-page booklet. Riboflavin deficiency symptoms together with recommended nutrient requirements for the following animals are presented: chickens, turkeys, swine, cattle, sheep, dogs, fur-bearing animals, and horses. There are five tables, five charts together with photos of riboflavin manufacture.

"Riboflavin for Poultry and Livestock" is issued by Agricultural Div., Commercial Solvents Corp., Dept. FP, 17 E. 42nd St., New York 17, N.Y. When inquiring specify FP 2338 on handy form, pages 2 and 3.

JOHNSON Direct Acting Solenoid Valve — for 150 lbs. Differential Pressure . . .

You *can* get a solenoid valve that operates under differential pressures up to 150 lbs., temperatures to 400°F., *without pilot valves.* It ends the time lag and wiredrawing that come with slow opening —the danger of sticking that comes with auxiliary pistons. It offers unusual possibilities for all types of automatic, or remote, flow control. Johnson Solenoid Valves are available for normally closed or normally open service; with stainless steel valve and seat or Jenkins disc; in sizes from ½" to 3".

Write for Bulletin "V"



WHERE CAN YOU USE THIS AUTOMATIC VALVE?

- No pilot valves
- Temperatures to 400°F.
- Differential Pressures to 150 lbs.
- Immediate full flow
- Heavy duty construction

The Johnson Corporation

834 WOOD ST. THREE RIVERS, MICHIGAN

When inquiring check FP 2339 on handy form, pgs. 2-3

MARLEY NOZZLES are *First* choice in FOOD PROCESSING

Food processing plants all over the world pick MARLEY NOZZLES for their outstanding efficiency in providing maximum break-up of water at lowest pressures. Three designs are available . . . ONE PIECE, TWO PIECE, ATOMIZING. None have moving parts . . . All meet specific needs. Write for Bulletin SN3-50 today.

THE MARLEY COMPANY, INC.
KANSAS CITY 15, KANSAS

When inquiring check FP 2340 on handy form, pgs. 2-

The Food Processing Fellowship

(Continued from page 9)

well-qualified engineers for the food processing industry. More than ever before food processors rely upon adequate knowledge and application of the mechanical, physical, chemical, and biological requirements for effective and efficient operation. One reason is increase in size and complexity, and necessity for more accurate control of quality. More important, however, is the adoption of techniques which engineering has made practical on an industrial scale.

Many operations, which a few years ago were considered as strictly limited to the laboratory, are now being used on a huge scale by the food industry. One example is the concentration of liquid foods under extremely high vacuum. Some engineering developments, such as those in rapid heating and cooling, have even changed our laboratory concepts of what is possible in the improvement of food quality.

Establishment of this fellowship is another contribution by FOOD PROCESSING to the progress of the food industry. . .and a very practical endorsement of IIT's Food Engineering program.

IIT's graduate study program in food engineering is under the supervision of Dr. Ellery H. Harvey, Professor of Food Engineering and Director of Industry Sponsored Research. Further information concerning THE FOOD PROCESSING FELLOWSHIP and the undergraduate and graduate courses of study in food engineering may be obtained by writing Professor Milton E. Parker, Director of Food Engineering, Illinois Institute of Technology, Technology Center, Chicago 16, Illinois.

Research — Mother of Industry

(Continued from page 8)

if his inward fire for the discovery of new truths is too carefully banked by his bankers, the fire may go out — and all the coldly illuminated perfection of his brand new laboratory won't take its place.

C. F. Kettering once said — "When you lock the laboratory door, you lock out a great deal more than you keep in." I know that we in the Baking Industry and allied trades have found that new ideas in production and merchandising — freely exchanged at the national bakery association conventions and through the medium of the trade press — have benefitted both the individual baker and his industry. And within reason I can see no reason why this same principle does not apply to developments in research particularly with respect to operating methods.

For even from a strictly selfish viewpoint the fact is that the prize for research will go to the company or the individual who gets to the public with the most practical and the best-merchandised product — rather than to the producer who has kept his abstract idea so carefully guarded that he hasn't ever come to the point of marketing it.

Starches as Ingredients

"Food Starches with Amazing Versatility" is six-page folder telling of 14 starches used as ingredients in baking powder, canned foods, confections, pie and pastry fillings, fruit juices, glazes, gravies, sauces, etc.

Folder is issued by National Starch Products, Inc., Dept. FP, 270 Madison Ave., New York 16, N.Y. When inquiring specify FP 2341 on handy form, pages 2 and 3.

DRYING PROBLEMS?

JUST WRAP 'EM UP AND SEND 'EM TO US!

TEXTILES (All Fibres) · RUBBER · CHEMICALS · SOAP · PLASTICS · FOOD (Including Cereals and Fruits) · WOOD PRODUCTS · BUILDING MATERIALS · PAPER PRODUCTS (Including Clay Fillers)

Part of SARGENT's Research Laboratory, Specifically designed to help solve drying problems for Industry.

IN THE SARGENT RESEARCH LABORATORY any mill condition and any stock condition can be duplicated, to determine:

1. The one best, exact, commercially practical method of drying your product.
2. How to attain highest production rate in pounds of stock per hour per square foot of drying area, economically.
3. Air flow data
4. Required temperatures
5. Required heating surface
6. Dryer length and design
7. Apron or roller (feeding) speed
8. Exact development of drying curves required.
9. Possible simple changes in stock preparation prior to drying, to attain maximum quality and efficiency.
10. Controls required to maintain quality and quantity drying in uniform, continuous production.

CONSULT THE EXPERTS

C. G. SARGENT'S SONS Drying Research Laboratory for Industry is staffed by men who KNOW their jobs. They have the mental curiosity of the true scientist combined with the dollars and cents, how-can-it-be-done-to-keep-quality-up-and-cost-down outlook of experienced mill men. Here is an invaluable source of experience and knowledge, to serve you and your industry. Wherever a drying process occurs, from food to plastic, textiles to rubber, paper to paint, SARGENT'S Drying Research Laboratory is highly qualified to serve, advise, recommend, and design special drying equipment.

Bring us your drying problems — the more difficult they are, the better we like them!

C. G. SARGENT'S SONS CORP.
Graniteville, Massachusetts
SINCE 1852

When inquiring check FP 2342 on handy form, pgs. 2-3

Leading Manufacturer Reports...

SUBSTANTIAL SHIPPING SAVINGS—

with

STANLEY Steel Strapping

Safe . . . quick . . . economical shipment of products of a prominent textile manufacturer was made possible with the Stanley Steel Strapping System. Packaging and shipping operations were speeded . . . man-hours cut to the bone. Lighter, less expensive containers were used, saving space and weight in transit.

The complete System includes tools, reels, seals, strapping and accessories—everything needed for *your* application. The Stanley Works, Steel Strapping Division, 203 Lake Street, New Britain, Connecticut. Offices in principal cities.

Improved ACE Strapping Tool

Fast, rugged and easy to operate. Positive spring feed magazine holds 100 seals. Operates in any position. Three sizes — for ½", ⅝" and ¾" strapping.

STEEL STRAPPING and CAR BANDING SYSTEMS

STANLEY

Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

When inquiring check FP 2343 on handy form, pgs. 2-3

Bulk Loading Method of Crop Harvesting Increases Labor Productivity 3½ Times

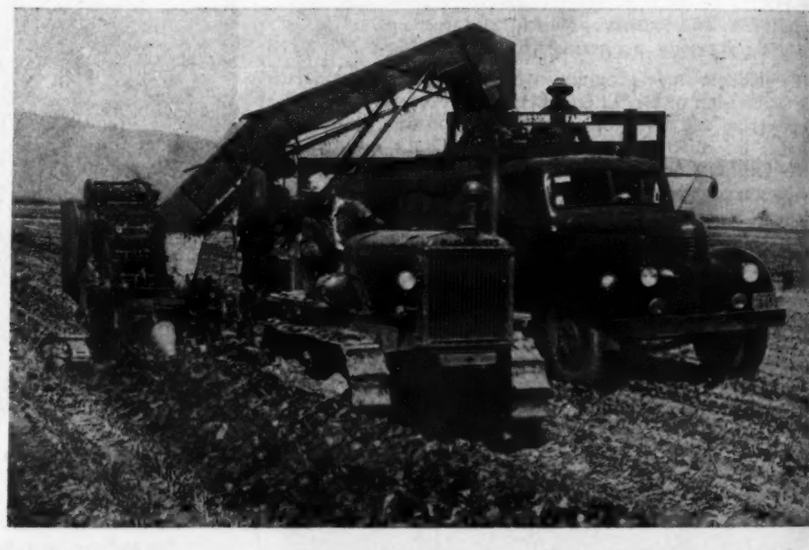
Elimination of crate handling increases capacity 70% while reducing labor requirements in half

PROBLEM: A national frozen food packer found that in mechanizing spinach harvesting, tonnage was limited by the ability of field labor to move filled crates from the cutting apparatus. Back fatigue was common on this job to the point where men rotated in half-hour shifts.

Solution: Crate loading was dispensed in favor of bulk loading from a tractor drawn harvester.

Spinach, when planted in rows, is cut at a predetermined height by rotating knives, running parallel to the ground. These knives are controlled by a slip clutch, adjusted to slip when knives encounter a noncuttable object. Devices in front of the knives guide the spinach, as it enters the machine. At the instant of cutting, forks of the conveyor pick it up in a raking action and elevate it to the rear of the harvester.

Instead of crate loading, cut leaves are bulk loaded directly into trucks or trailers moving in the field with the harvesting unit. The bulk loader is an attachment to the harvester, capable of conveying crop over several rows to a truck height of 5 to 11½ ft. The harvester is capable of handling 8 to 12 tons/hr.



NEW METHOD requires only three persons to harvest and bulk-load spinach; one on the control lever to regulate cutting height, one to drive tractor, and one in truck body

OLD METHOD required six men as seen in photo, the three additional men to handle and fill crates

Results: Initial cost of replacing crates and the extra time to handle, store and repair them, was eliminated.

Instead of six men only three men or boys were needed for harvesting operations in the field. Rate of harvest was increased 70% and productivity of labor increased 3½ times. Factory labor on the initial inspection belts was reduced, since height of the cutting knives can be regulated to leave yellow leaves in the field.

Source: Harvester and Bulk Loading attachment manufactured by Nu-Way Harvester Co., Dept. FP, 221 N. LaSalle St., Chicago 1, Ill. . . . or for more information check FP 2344 on handy form, pages 2 and 3.

Reports on methods for lowering sugar beet spoilage during storage . . .

loss lowered by ventilating storage piles with cool night air; rot-resistant variety being tested

Estimated sugar beet spoilage during storage in big piles and consequent reduction in sugar yields before processing, runs to a loss as high as $10,000,000 yearly.

One solution is to build more or larger factories. However, this would require much critical steel. Another suggestion is to force ventilation through the big piles with chill night air to keep down beet temperature. This method has cut sugar content loss by as much as a third.

Further reduction is possible by growing beets with roots of lower respiration (breathing) rate and resistance to rots, both factors controlled by heredity. Famous curly-top resistant, U.S. 22/3, has not enough resistance. However, several progeny of U.S. 226, a leaf-spot resistant variety, has shown improved keeping quality. These selections are now receiving extensive testing.

(From Dr. G. H. Coons, USDA Plant Industry Station, Dept. FP, Beltsville, Md.)

EPN pesticide proving effective against more crop insects . . .

can be used as a dust, spray, or concentrate to control insects on a wide variety of crops

Investigational reports on using EPN as a pesticide are contained in 76-page technical manual. The chemical was introduced last year solely as a control against mites on deciduous fruits, but is now proving effective against other insects.

Application methods are presented to use it as a dust, spray, or concentrate. It is "highly promising" as a general insecticide for peaches and is effective against many apple, pear, citrus, plum, grape, walnut and pecan insects. It has been used to control corn borers, having initial and residual activity comparable to DDT, but indicating less toxic residue remaining on corn foliage when harvesting.

There are details in this mimeographed manual on toxicology, residues, and analytical methods for determining amounts of chemical on harvested crops. EPN residue data reveal dosage level and number of treatments influence initial residue, but its degeneration on plant surfaces is "sufficiently rapid that higher rates of application or more numerous treatments early in the season generally do not give proportionally greater residues at harvest." Specific residue data on 11 crops are shown.

EPN is an organic phosphorus compound of ethyl p-nitro phenyl thionobenzenephosphonate. It is supplied as EPN-300 insecticide, a 25% wettable powder.

"EPN, a Manual of Technical Data" (second edition) is published by Grasselli Chemicals Div., E. I. du Pont de Nemours & Co., Dept. FP, Wilmington 98, Del. When inquiring specify FP 2345 on handy form, pages 2 and 3.

Shows DDT use

Twenty-page instruction booklet details the use of DDT dusts, wettable powders, emulsions, solutions, and aerosols. Type of formulation, timing, dosage, and necessary equipment are listed for the control of various insects. Instruction booklet is issued by Monsanto Chemical Company, Dept. FP, St. Louis 4, Mo. When inquiring specify FP 2346 on handy form, pages 2 & 3.

How You Benefit from Victor Experience

Producers of a wide variety of foods have discovered that it pays to check with Victor on product problems. Frequently the right answer is already in Victor's files. This is how you benefit from Victor's fifty and more years of experience in working on food production problems. Do you use phosphates for leavening, enrichment, conditioning? Do you have a special problem that may be solved with a phosphate? Bring your problem to Victor. We may already have the answer . . . or a clue to it. This is a part of Victor's accent on service to industry. Write today. There's no obligation, of course.

VICTOR CHEMICAL WORKS

VICTOR CHEMICAL WORKS

141 West Jackson Blvd. • Chicago 4, Illinois

When inquiring check FP 2347 on handy form, pgs. 2-3

Automatic Tagging and Counting Complete Mechanization of Wm. S. Schull's Tea Bagging Operation

Addition to heat seal unit attaches strings, tags to individual tea bags at 120 per minute . . .

Tagging machine (light color unit, center) recently mounted to older bag forming unit

PROBLEM: To meet consumer demand, Wm. S. Schull Co., Camden, N. J., required a high speed line to attach strings and tags automatically to individual tea bags as they are produced by the packaging machine.

Bags are automatically formed from two rolls of paper, heat-sealed at edges to form a tube, sealed at bottom edge, filled volumetrically with 35 grains of tea, sealed at top edge, and cut from tube. Filling unit has a revolving flat cylinder with easily adjusted openings to dispense specific amounts of tea into the tubes.

Solution: After being detached from the tube, filled bags move to newly installed tagging machine. Here staples attach string from a spool to heat sealed portion of bag, cuts tag from paper roll, staples tag to string, and cuts proper length of string. Stapling is adjusted so upward pull of string is on bend rather than on joint between staple and bag. Machine is adjustable from minimum bag size of 2⅛" wide x 2⅜" long to maximum 2⅝" wide x 3¼" long.

Conveyor is synchronized to move forward as bags drop onto it and then by action of a cam move an extra distance, spacing bags into groups of eight. Groups of other numbers are possible by adjusting the cam. Operator picks up definite groups to place in glassine envelope and then into carton for extra flavor protection.

In dropping onto the belt, each bag tumbles so that the string and tag is wrapped around it.

Staple wire is tinned and no adverse flavor effect has been detected.

Results: Tagging machine easily handles full output, averaging 120 bags per minute.

Operation is so efficient, Schull's has ordered additional tagging and counting units.

Source: Model A Tagging machine, model A Counting conveyor as well as model AS Stokeswrap are available from Stokes & Smith Co., Dept. FP, Frankford, Philadelphia 24, Pa. . . . or for more information check FP 2348 on handy form, pages 2 and 3.

No Discoloration from Light Rays When Using Masking Boards to Pre-package Foods

Consumers approve package; cheese, meat juices don't stain or penetrate through laminated paperboard

MEATS and cheese will discolor quickly when exposed to light rays. This is costly in self-service displays, because it means numerous rewraps and actual food loss from disposing of discolored slices.

To overcome this problem, masking boards and circles have been developed and accepted by consumers in tests at several midwest food chains. The display is prepared in an "upside down position" — the masking board and label identification facing the customer.

Laminated board is available to package foods in which juices tend to penetrate the board. Two sheets of board are united by a wax laminant, which sets up a barrier to food juice, oil or fat penetration, resulting in a rigid board during life of the display. This rigidity

Masking boards hold consumer appeal of pre-packaged products

also allows machine wrapping and sealing as well as repeated consumer handling.

Some absorption of juice into board is desirable. If the board does not absorb any juices, meat will darken; if too absorbent, meat dries out.

Made of solid bleached paperboard, the boards come in many sizes. They receive a special sizing treatment, so it doesn't matter which side is placed next to the food. They are cut with rounded corners, preventing overwrap puncture, and are free from odor.

(Masking boards are a development of Marathon Corp., Dept. FP, Menasha, Wis. . . . or for more information check FP 2349 on handy form, pages 2 and 3.)

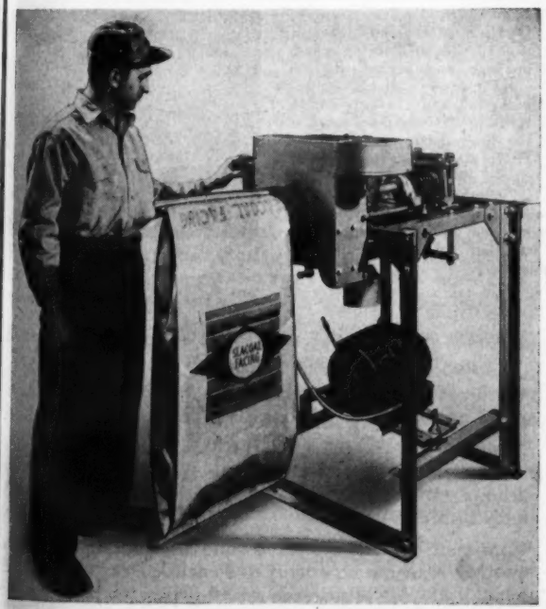
Bag position does not affect accuracy in weight of material delivered . . .

feed hopper is equipped with agitator designed to prevent bridging

Uses: Bag packer is used for weighed filling of valve-type paper bags.

Features: Bag weighing tube is independent of material-conveying tube housing so that bag position does not affect final weight delivered.

Description: Unit has 51 inch overall height, is only 24 inches wide. Operator hangs bag on tube and presses start button. When the predetermined weight is reached, tube displacement throws a microswitch which stops the feed. Hopper agitator is reported to maintain a steady



Packer fills bags to accurate weight regardless of bag position

flow of a wide variety of granulated and powdered products. Black Diamond Automatic Valve Bag Packer is equipped with totally enclosed motor and dust-tight electrical fittings. In conjunction with a dust control housing, these make machine easy to clean as well as safe from explosion. Manufacturer offers data or free tests on products.

Source: Manufactured by Black Products Co., Dept. FP, 13513 Calumet Ave., Chicago 27, Ill. . . . or for more information check FP 2350 on handy form, pages 2 and 3.

It's the unseen quality that produces true economy in Gaylord Containers
Gaylord Boxes
Strong fibres start here
When these logs are pulled up the chute toward the chipper they are taking the first step toward becoming a Gaylord Shipping Container.
Throughout the entire complicated procedure of converting wood into paper—sharp-eyed technicians are constantly checking quality, making adjustments, testing to be absolutely sure that the end product is as strong and tough as it is possible to make it.
This quality control by experts is one reason why Gaylord lists many of the world's largest users of shipping containers among their satisfied customers.
GAYLORD CONTAINER CORPORATION
General Offices: SAINT LOUIS
CORRUGATED AND SOLID FIBRE BOXES
FOLDING CARTONS
KRAFT BAGS AND SACKS
KRAFT PAPER AND SPECIALTIES
New York • Chicago • San Francisco • Atlanta • New Orleans • Jersey City • Seattle • Indianapolis • Houston • Los Angeles
Oakland • Minneapolis • Detroit • Columbus • Fort Worth • Tampa • Dallas • Cincinnati • Des Moines • Oklahoma City • Portland
Greenville • St. Louis • San Antonio • Memphis • Kansas City • Bogalusa • Milwaukee • Chattanooga • Weslaco • New Haven • Amarillo
Appleton • Hickory • Greensboro • Sumter • Jackson • Miami • Omaha • Mobile • Philadelphia • Little Rock • Charlotte • Cleveland

RICHARDSON
BAGGING
EQUIPMENT
WORKS FOR
QUAKER OATS

In recent years, the nation's canine population has developed a voracious appetite for the well-known dry dog food, Ken-L-Biskit. Production soared and with it the need for a more rapid bagging system. Quaker Oats called in the Richardson Scale Company—specialists in materials-handling-by-weight. They recommended and installed a battery of Richardson E-50 Baggers. Result: A potential bottle-neck was eliminated and Fido was kept happy with plenty of Ken-L-Biskits.

This is just one of many instances where Richardson's 50 years of materials-handling-by-weight experience have proved valuable. Experience with materials from seed to feed and coal to chemicals enables Richardson engineers to recommend the best system or combination of systems to solve your particular problem. Remember, Richardson engineers have successfully solved numerous materials-handling-by-weight problems such as yours. A survey of your problem places you under no obligation, and can point the way to more profitable operation.

PROBLEM:
To bag rapidly and efficiently 25- and 50-lb. lots of Ken-L-Biskit. Weight of individual bags to be held to close tolerances.

SOLUTION:
Installation of a number of Richardson E-50 Baggers. Speed and dependability were illustrated by the tremendous yearly output that passed through these scales, enough to fill completely a train more than 10 miles long.

For information on Richardson Automatic Weighing Equipment, ask for Bulletin No. 0450. For information on Richardson Proportioning, Blending, and Process Control Equipment, ask for Bulletin No. 0550.

Richardson Scale Co., Clifton, New Jersey. Feeder-Weigher Systems of All Types: Automatic Bulk Weighing Hopper Scales, Including Conveyor-Feed Types — Continuous Feeder-Weighers—Automatic Bagging Scales — Bag-Sewing Conveyors — Packers — Process Control Panels. *Branch offices in:* Atlanta • Boston • Detroit • Minneapolis • Cincinnati • Wichita • Montreal • Omaha • New York • Pittsburgh • San Francisco • Toronto • Buffalo • Chicago • Philadelphia • and Houston.

Richardson
MATERIALS HANDLING BY WEIGHT SINCE 1902
7872

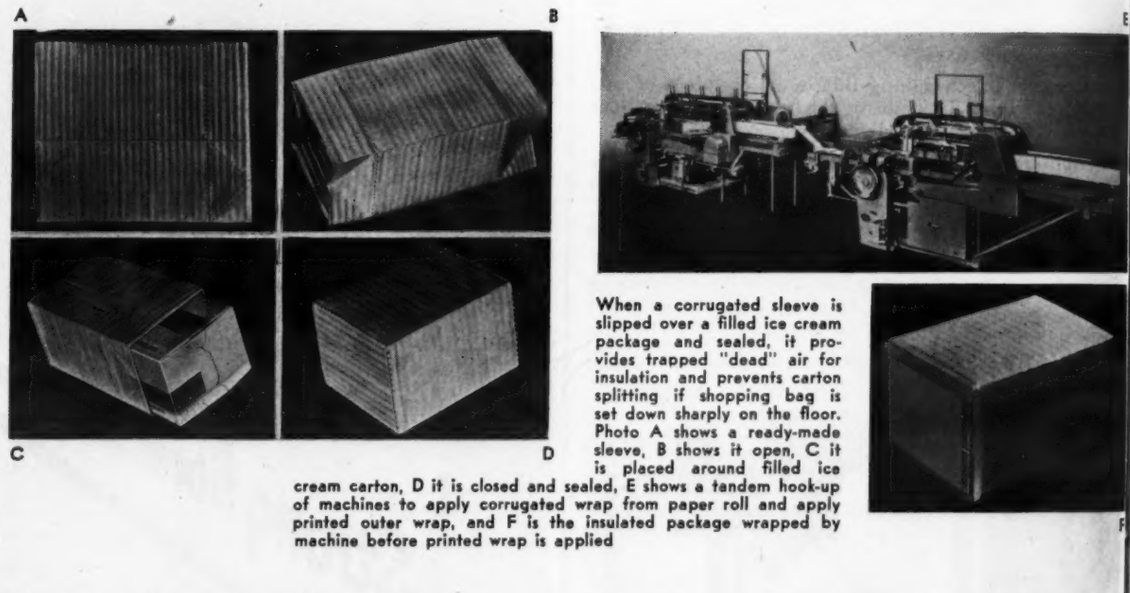
When inquiring check FP 2351 on handy form, pgs. 2-3

Ice Cream Carton is Carry-home-package When Insulated at Plant

Two Types of Insulated Sleeves Available

Ready-made sleeve received flat, slips on carton

Sleeve fabricated from paper roll at wrapping time



When a corrugated sleeve is slipped over a filled ice cream package and sealed, it provides trapped "dead" air for insulation and prevents carton splitting if shopping bag is set down sharply on the floor. Photo A shows a ready-made sleeve, B shows it open, C it is placed around filled ice cream carton, D it is closed and sealed, E shows a tandem hook-up of machines to apply corrugated wrap from paper roll and apply printed outer wrap, and F is the insulated package wrapped by machine before printed wrap is applied

USES: Ready-made insulated sleeve to slip on "take-home" pint packages of ice cream.

Features: Sleeve provides insulating properties and package protection at 1/3 cost of conventional insulating package. Purchasing special machinery is not necessary.

Description: Sleeve is made of heavy corrugated kraft paper, backed with a stiff sheet of bleached white kraft. It is held firmly together with a strong glued lap, deeply scored and perforated for easy assembly.

Both fully and semi-automatic packaging machinery are on the market to insert this corrugated sleeve over filled cartons.

Source: Sherman Ice Cream Sleeve is made by Sherman Paper Products Corp., Dept. FP, Newton Upper Falls, Mass. . . . or for more information check FP 2352 on handy form, pages 2 and 3.

USES: Pint ice-cream cartons are machine wrapped in corrugated paperboard.

Features: 60-80 cartons are wrapped per minute using corrugated paperboard from large rolls.

Description: Machine cuts corrugated board from roll, slits it for end-folds, scores it, forms it neatly around entire carton and applies end-seals to hold folded ends firmly in place.

Continuous operation is possible by hooking up with another machine so corrugated-enclosed cartons receive a final wrap in a printed waxed-paper wrapper.

Source: Special Model FF for applying insulating corrugated wrap is a machine made by Package Machinery Co., Dept. FP, East Longmeadow P.O., Springfield, Mass. . . . or for more information check FP 2353 on handy form, pages 2 and 3.

Packaging Institute's Annual Forum, October 22-23-24, 1951, Commodore Hotel, New York City. A convention without exhibits. Companies are especially urged to send their packaging room supervisors and other key employes to the all-day Production Seminar. For details, address: The Packaging Institute, 342 Madison Avenue, New York City.

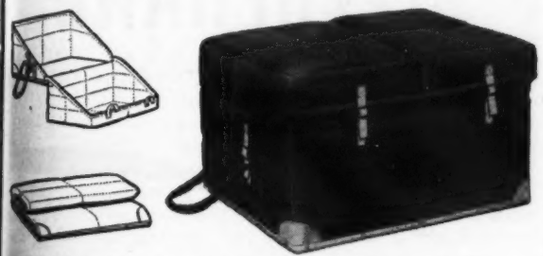
Insulates frozen foods for 15 hrs, allows shipping or deliveries without refrigeration . . .

lightweight container collapses for return shipment

Uses: Collapsible insulated shipping container can be used where shipments or deliveries are to be made in trucks not equipped for refrigeration, or where shipment cannot be placed under refrigeration immediately upon arrival.

Features: Fabric walls provide sufficient insulation to hold most frozen foods safely for 15 hrs, yet collapse to a thickness of 5" for shipment when empty.

Description: Can-Pro collapsible container is made of quilted waterproof canvas inside and out. Between these layers is a blanket of insulating fiber 1 to 3 inches thick. Base is of insulated plywood reinforced with steel band and steel studs. Model C-100 is shown. This



Drawing shows container open for loading or unloading, and collapsed for shipment empty

model can be loaded or unloaded by one man. It stays open in the position shown in drawing. Weighing only 15 lb, the container is 24" long, 19" wide, and 18" high. It has a capacity of 144 one pound packages of frozen food. Information on other sizes and types is available.

Source: Development of Can-Pro Corporation, Dept. FP, Fond du Lac, Wis. . . . or for more information check FP 2354 on handy form, pages 2 and 3.

Labeling cans, sealing cases, faster, easier with adhesives that are ready-to-use . . .

three types, including handy pellet form, cover needs of three basic canning operations

Use: For use by canners and other food manufacturers.

Features: Ready-to-use, case-sealing adhesive has high-setting speed and greater tearing bond area. Paste for wrap-around labeling of cans and jars has required tack for the stiffer labels encountered today. Adhesive pellets eliminate waste in form of powder or melted material.

Description: First in this series of adhesive materials is case-sealing adhesive containing 49 to 50% solids. This is 15 to 20% higher solids than many case-sealing adhesives contain before dilution. Ready-to-use consistency makes dilution unnecessary. High solids makes much less glue necessary in most all applications.

Paste for wrap-around labeling is white in color and ready-to-use.

Pellets are uniform in size and shape and melt quickly in gum pots. Available in three colors for different can temperature ranges.

Source: Box-Weld case adhesive, Lap wrap-around can labeling paste and Pick-ets pellets are made by Union Paste Co., Dept. FP, 1605 Hyde Park Ave., Hyde Park, Mass. . . . or for more information check FP 2355 on handy form, pages 2 and 3.

PROTECTION AND *Beauty*

RUBY-THROATED HUMMING BIRD. Quick!—with wings that move 40-50 times per second. And beautiful!—metallic green back feathers and a scarlet bib.

CROCODILE. A thick, tough skin capped with horny plates along the spine protects this rough-and-ready reptile in its tropic haunts. The leathery hide is prized for women's shoes, handbags, and luggage.

KVP *Papers* for the FOOD INDUSTRY

It takes so little of the right thing to make sure your foodstuffs are clean, fresh, tasty, and wholesome, when they reach consumers. Yet it means so much to sales!

KVP Papers are the "right thing" . . . in more ways than one. Right for protection. Right for price. Right for extra sales appeal that may be added through colorful designs created and produced by KVP artists and printers.

INDUSTRIES SERVED

BAKING
Bread — Cracker
Cereal

MEAT
Packing — Locker
Retail

DAIRY
Butter — Cream — Cheese
Ice Cream — Milk

FISH • FRUIT • FROZEN FOODS
POULTRY • SHORTENING • VEGETABLE

Kalamazoo Vegetable Parchment Company
PARCHMENT • MICHIGAN

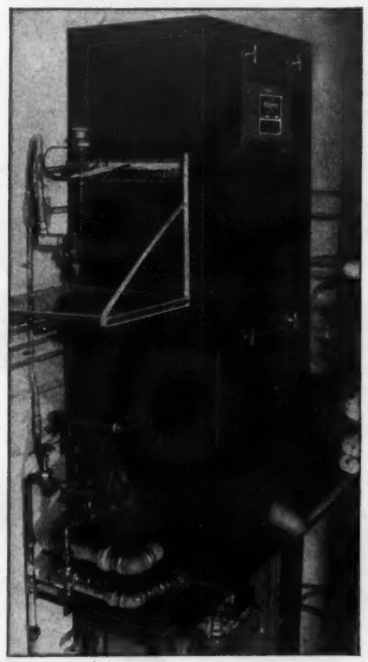
ASSOCIATED COMPANIES:
KALAMAZOO VEGETABLE PARCHMENT CO., DEVON, PENNA.
KVP COMPANY OF TEXAS, HOUSTON, TEXAS
HARVEY PAPER PRODUCTS CO., STURGIS, MICHIGAN

IN CANADA:
THE KVP COMPANY LIMITED, ESPANOLA, ONTARIO
APPLEFORD PAPER PRODUCTS LIMITED,
HAMILTON, ONTARIO • MONTREAL, QUEBEC

When inquiring check FP 2356 on handy form, pgs. 2-3

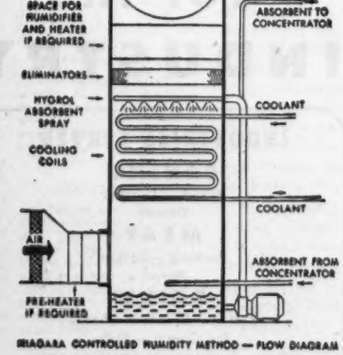
New "Controlled Humidity" Method Gives a Better Solution to Air Conditioning Problems

"Hygrol" Absorbent Liquid Dehumidifies Fresh Air Without Refrigeration



NIAGARA Air Conditioners or Dehumidifiers using "Hygrol" liquid absorbent give precise control of air temperature and humidity... at lower operating cost, with large savings in space and with smaller and less expensive equipment, in many applications.

This method dehumidifies the air by passing it through a chamber in which "Hygrol" spray removes its moisture and produces a low dew point. The "Hygrol" solution resulting is continuously and automatically re-concentrated, providing always full capacity in air conditioning and assuring always a constant dehumidifying capacity and a trustworthy, constant condition for your material, apparatus, process or room to be conditioned.



NIAGARA CONTROLLED HUMIDITY METHOD — FLOW DIAGRAM

Write for Specific Information

"Hygrol" is a liquid, not a salt solution; it stays pure and non-corrosive; it does not cause maintenance or operating troubles in food plants or in chemical processes.

Investigate this new Niagara Method for "comfort" air conditioning as well as to protect quality in hygroscopic material, or processes or instruments, or to prevent condensation damage to metals, parts or products.

NIAGARA BLOWER COMPANY

Over 35 Years Service in Industrial Air Engineering

Dept. FP, 405 Lexington Ave. **New York 17, N.Y.**

Experienced District Engineers in all Principal Cities

When inquiring check FP 2357 on handy form, pgs. 2-3

PACKAGING

Controlling heat of jaws aids sealer in welding cellophane, foil . . .

three models offer sealing lengths of 7, 14½ and 22"

Uses: Welds materials such as cellophane, diafane, maralux and foil.

Features: Perpendicular action of upper jaw and foot pedal leverage

Light pressure operates foot sealer

produces a high ratio of pressure with a minimum of effort. Both sealing jaws are heated and thermostatically controlled.

Description: Made in three models with sealing jaw lengths of 7, 14½ and 22", with sealing surfaces of various types to suit requirements.

Source: Amsco Packaging Machinery Co., Inc., Dept. FP, 31-31 48th Ave., Long Island City, N. Y. . . . or for more information check FP 2358 on handy form, pages 2 and 3.

Features labeler capable of 75 to 150 units/min

Four-page bulletin shows and gives specifications of labeling machine that is adjustable for all shapes and sizes of containers. Indicates that unit handles containers from fractional ounce to gallons, and label sizes from "postage stamp" to 5 x 6".

Calls attention to fact that labeler requires no operators and functions in conjunction with any semi-automatic or fully automatic packaging line. "MRM Labeling Machines" is issued by MRM Company, Inc., Dept. FP, 191 Berry St., Brooklyn 11, N.Y. When inquiring specify FP 2359 on handy form, pages 2 and 3.

FOOD SELLS IN CELLOPHANE

IN THE NEXT 60 SECONDS—MUNSON BAGS WILL EARN AN ASSIST IN SELLING MORE THAN 100 DIFFERENT PRODUCTS

Clear-cut selling identity plus the sanitary protection provided by Munson bags add up to maximum sales-appeal for your product. Fine quality transparent cellophane bags are designed expressly to impart style, dignity, or whatever characteristics you wish to make your product stand out at the point-of-sale.

Munson produces cellophane bags and printed roll stock for the handling and selling of every type of food product. Complete packaging design facilities are available to supply your cellophane packages with the extra sales-winning characteristics you desire. A group of highly skilled, experienced men is prepared to discuss your packaging problems and to make recommendations.

Protect, display and sell your products in cellophane bags by Munson.

Write today for samples

345-MB

Sales Offices Located in Boston, Chicago, Detroit, Kansas City and Seattle

THE MUNSON BAG COMPANY

1330 West 117th Street • Cleveland 7, Ohio

When inquiring check FP 2360 on handy form, pgs. 2-3

Eliminate smear and identification damage on printed polyethylene food packages . . .

permanent printing process increased packer sales as use instructions remained legible

Problem: Sales of specialty foods of Ad. Seidel & Son, Inc., Chicago, packaged in polyethylene transparent pouches were handicapped due to repeated instances of smear and damage to the printed identification and instructions on packets.

Solution: Package manufacturer developed a process for permanent adhesion of ink to pouch after a rigid testing period. Process is a separate production operation independent of the conventional procedure for printing on polyethylene.

Results: Printed ingredients and instructions on pouches remained legible and complete after transporting and handling until eventual use. Seidel's lightweight, waterproof "Trail Packets", containing four servings requiring only addition of water for preparation, had strong sales in the summer camp field.

Source: Perma-process printing on polyethylene film is patented by Milprint, Inc., Dept. FP, 431 W. Florida St., Milwaukee 1, Wis. . . . or for more information check FP 2361 on handy form, pages 2 and 3.

Latest plastic film makes strong, flexible bags and drum liners . . .

fabricated by electronic welding; items available without DO ratings

Uses: Being used by many processing and packaging concerns for various types of drum liners and bags.

Features: Reported to have unusual strength and flexibility. Fabricated items are available without DO ratings.

Description: Drum liners and bags of this copolymer plastic film are electronically welded and tested, and are being manufactured in various sizes and shapes for practically every kind of steel or fibre drum, carton or case available.

Source: Announcement of the Protective Lining Corporation, Dept. FP, 22 East 17th St., New York, N. Y. . . . or for more information check FP 2362 on handy form, pages 2 and 3.

BUNS ARE FRESHER .....better!

Thanks to Cellophane!

Bag of Sylvania MS-3 in the 300 gauge retards drying of English muffins . . . keeps the product fresher . . . longer.

5 important properties that mean successful bakery packaging:

★ Low cost ★ Moisture protection
★ Durability ★ Transparency
★ Excellent printing surface

SYLVANIA® CELLOPHANE

Sylvania is always ready to help you make the most of your cellophane supply. Discuss this problem with your Sylvania representative or write us concerning your application. Address: Market Development, Dept. FP-10.

SYLVANIA DIVISION AMERICAN VISCOSE CORPORATION
Manufacturers of cellophane and other cellulose products since 1929
General Sales Office: 1617 Pennsylvania Blvd., Philadelphia 3, Pa.

When inquiring check FP 2363 on handy form, pgs. 2-3

PATENTED

Skates go to the rink (and from the store) in this H & D corrugated "luggage" box

It doesn't take an ice skater long to see that this is more than "just a box"—it's also a handy carrier for his skates. The result? Easier sales for clerks who sell Spalding skates packed in this bright, linen-finish corrugated box. Styled like a smart piece of airplane luggage, this H & D box helps provide the "plus" that turns shoppers into buyers.

The H & D Package Laboratory is ready to add a sales "plus" to *your* product, too, by creating a package with after-sales-use—or by providing better display . . . cutting wrapping costs . . . giving extra protection . . . increasing multiple or tie-in sales. For free booklet, "Pack to Attract," write Hinde & Dauch, 5105 Decatur St., Sandusky, Ohio.

H&D

HINDE & DAUCH
Authority on Packaging

FACTORIES IN: Baltimore • Buffalo • Chicago • Cleveland • Detroit • Gloucester, N. J. • Hoboken, N. J. • Kansas City, Kansas • Lenoir, N. C. • Richmond, Va. • Sandusky, Ohio • St. Louis • Watertown, Mass. Offices in principal cities.

When inquiring check FP 2364 on handy form, pgs. 2-3

PACKAGING

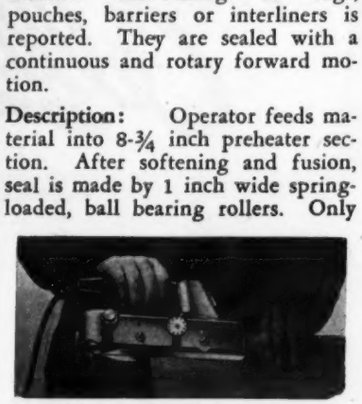
Fast heat-sealer is operated by hand . . .

produces continuous heat-seal of any length

Uses: Hand sealer can be used on conventional containers or on rigid materials such as scrimbacked or kraft backed foil, polyethylene, vinyls or pliofilm.

Features: Faster, easier and more accurate heat-sealing of bags, pouches, barriers or interliners is reported. They are sealed with a continuous and rotary forward motion.

Description: Operator feeds material into 8-¾ inch preheater section. After softening and fusion, seal is made by 1 inch wide spring-loaded, ball bearing rollers. Only one pass is made. Cast aluminum hand sealer weighs 5 lb. Heating is done by two, thermostat controlled, 150 w elements capable of maintaining 600°F at three-quarter power. Pilot light indicates when proper heat has been reached.



Hand unit weighs only 5 lb to ease operation

Source: Maker is Pack-Rite Machines Div., Techtmann Industries, Dept. FP, 714 W. Wisconsin Ave., Milwaukee 1, Wis. . . . or for more information, check FP 2365 on handy form, pages 2 and 3.

Fast, accurate weighing is the feature of bagging scale . . .

attaches to any wood, metal hopper to fill paper or burlap bags

Uses: For weighing out bags of practically all free flowing materials semi-automatically.

Features: Semi-automatic operation is fast and accurate. Either paper, burlap, or combination bags can be handled.

Description: Apex bagging scale is equipped with a safety type, all steel bag clamp. Two to one leverage system is equipped with pivots and bearings of fine tool steel. The simple over and under indicator has no small parts or springs and uses an extra large dash pot. Dust is

FOR YOUR DIRECT POWER DRIVE APPLICATIONS

Whitney Roller Chain Flexible Couplings offer the equipment manufacturer and machine user a practical and efficient unit for connecting power equipment to direct drives. All steel construction . . . precision roller chain and hardened cut tooth sprockets provide positive operation . . . assure long life.

Check these Whitney Flexible Coupling features, easily installed, allows for motor end float, disconnects without removing shafts or bearings, allows for slight shaft misalignment.

You can use Whitney Flexible Couplings wherever a posidive yet flexible direct drive is required. Write for information.

WHITNEY CHAIN COMPANY
227 Hamilton Street, Hartford 2, Connecticut

When inquiring check FP 2366 on handy form, pgs. 2-3

BAKER TRUCKS require LESS MAINTENANCE

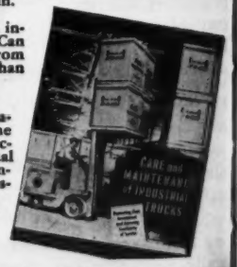
to you this means
- LESS TIME OUT OF SERVICE
- TOP OPERATING EFFICIENCY
- LOWER OVERALL COST

Baker Trucks are built to give maximum trouble-free service, and designed for easier preventive maintenance and less costly repairs.

Electric dynamic braking saves wear on brake linings and protects truck parts. Service brakes can be adjusted in 5 min., and relined in 30 min.

Power Axle has fewer moving parts and is less subject to wear. Mast assembly can be removed in 20 min. and power axle pulled in 40 min.

Trailing Axle is the simplest in use on industrial trucks. Can be removed from truck in less than 20 minutes.



These 3 illustrations are from the new 16-page picture-story manual "Care and Maintenance of Industrial Trucks." Write for your copy today.

BAKER INDUSTRIAL TRUCK DIVISION of The Baker-Raulang Company
1221 West 80th Street, Cleveland 2, Ohio

Baker INDUSTRIAL TRUCKS

When inquiring check FP 2367 on handy form, pgs. 2-3

BETTER LIGHTING for STEAMY, DUSTY locations

New, Improved

Benjamin
"VAPOR-TITE 40"
Fluorescent Lighting Units

Three important advancements in these new, improved units enable you to obtain the following benefits:

SIMPLIFIED MAINTENANCE

New Spring-Type Clamps! You need unsnap only three of these new, hand-operated clamps to open the cover. When cover is closed, clamps hold it securely in place to keep out steam, dust, dirt.

Heat, Impact-Resisting Glass Cover, not affected by temperature extremes, cracks only under intense mechanical strains.

Exclusive "Springlox" Lampholders cut relamping time to a few seconds!

INCREASED SAFETY

Lamps are *held in position* by new "Springlox" Lampholders, exclusive with Benjamin. They provide positive assurance that lamps will not vibrate loose.

GREATER EFFICIENCY

High Light Output! Genuine Porcelain Enamel reflector has reflection factor exceeding 85%.

Available for two or three 48", low fluorescent lamps.

5|0 BENJAMIN

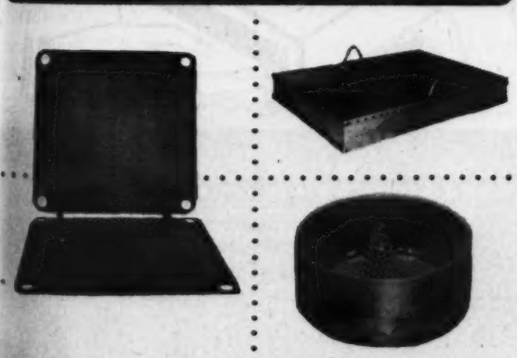
FREE DATA—Complete "Vapor-Tite 40" specifications and lighting data, sent upon request. Write Benjamin Electric Mfg. Co., Dept. QQ, Des Plaines, Ill.

BENJAMIN "Vapor-Lite 40" FLUORESCENT LIGHTING UNITS

Sold Only Through Electrical Distributors

When inquiring check FP 2368 on handy form, pgs. 2-3

Wire Cloth—Filter Cloth
FABRICATED UNITS



all meshes, all weaves, all alloys

Complete plant facilities for fabricating miscellaneous units, filter elements, strainers, trays and others.

For unusual Process Equipment problems, **MULTI-METAL** offers a helpful design service, modern facilities and years of experience building large and small custom sheet metal structures.

Write for Catalog No. 50

Multi-Metal WIRE CLOTH COMPANY, INC
1340 Garrison Ave., N. Y. 59, N. Y.
Telephone: Kilpatrick 2-2500

When inquiring check FP 2369 on handy form, pgs. 2-3

controlled by a shield enclosing the upper part of the scale. Flow control is handled by a sliding gate valve.

Source: Distributed exclusively by Burrows Equipment Company, Dept. FP, 1316-9 Sherman Ave., Evanston, Ill. . . . or for more information check FP 2370 on handy form, pages 2 & 3.

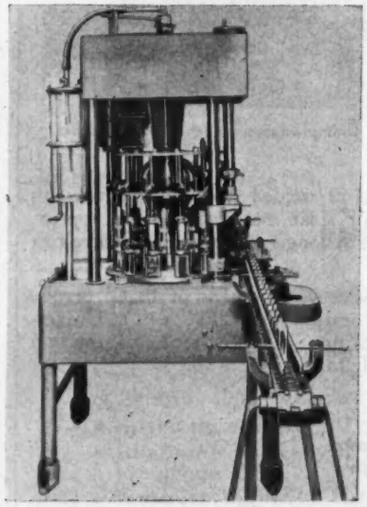
Spilled liquids can't hurt overhead working parts of filling machines . . .

now standard construction in all maker's automatic, rotary units

Uses: Line of fully automatic filling machines for either vacuum or gravity operation. Models having from 12 to 40 spouts have production capacities up to 400 containers (glass, plastic, or tin) per minute.

Features: Previously announced R-48 and R-50 Rotary Filling Machines are well known — the R-48 machine with the entire driving mechanism and vacuum system in the base cabinet, and the R-50 machine with all working mechanisms overhead.

New line has all working mechanisms overhead. This construction was decided upon to prevent spilled liquids from interfering with working components.



Note absence of working mechanisms beneath latest line of fully automatic rotary filling machines

Description: Bottom half of the new machines is entirely free of working parts. Rapid disassembly.

Source: Announcement of the MRM Company, Inc., Dept. FP, 191 Berry St., Brooklyn 11, N. Y. . . . or for more information check FP 2371 on handy form, pages 2 and 3.

"Never leave that till tomorrow which you can do today."

—Ben Franklin's Almanac, 1757

If waste and inefficiency ruin thee and thy country today, how shall thee profit by finding a horseshoe tomorrow?

—Acme Steel Notebook, 1951

The Acme Steel steel strapping and wire stitching equipment you have today means efficient and thrifty production in your packaging, shipping and materials handling operations. Protect it well.

In spite of an increase in productive capacity, U.S. military requirements on some products make it impossible for Acme Steel to meet all the requirements of our more than 50,000 customers. To make the best use of Acme Steel flat strapping, stitching wire and other products available to you, let our representative put Acme Steel's experience and ingenuity to work for you.

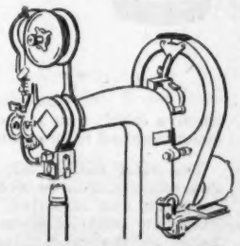
In the past 71 years, we have helped our customers weather many a difficult period. We are ready and willing now to help you keep your tools on the job or develop new setups that will increase efficiency in your operations and minimize waste.

Information for ready reference on Acme Steel products is available upon request.

ACME STEEL COMPANY

Dept. FP-101, 2838 Archer Avenue, Chicago 8, Illinois

We have 46 service offices in the United States and Canada. If not listed in your telephone directory, write us.



Five things you can do to keep your Acme stitching machines on the Job!

1. Clean and oil every day.
2. Never operate stitcher without material in stitching position.
3. For perfect stitching, check work regularly. If in doubt about any operating difficulty, refer to service manual (additional copies sent upon request) or submit stitched material, identified by machine type and serial number, to Customer Service Department, Acme Steel Company.
4. From time to time moving parts need replacement—keep a supply on hand to make quick, minor replacements.
5. Ask us about the Acme Steel "3-WAY SERVICE PLAN" for equipment repairs.

ACME STEEL

In 1950 Acme Steel had 9135 stockholders—a growth of 21.1% over 1949. They comprised 3223 men, 3089 women, 2260 joint accounts, 563 trusts, corporations and institutions. 646, or 15.9%, of our employees are stockholders.

ACME STEELSTRAP flat steel strapping and ACME UNIT-LOAD carload bracing BAND, SEALS and TOOLS • ACME SILVER-STITCHERS and ACME SILVERSTITCH WIRE for box stitching • ACME-MORRISON METAL STITCHERS and BOOK STITCHERS • ACME-CHAMPION BAG STITCHERS • ACME HOT AND COLD ROLLED STRIP STEEL • ACME GALVA-BOND steel slat stock for Venetian blinds • ACME STEEL SPECIALTIES, including hoops, corrugated fasteners, barbed box straps, nail-on strapping and other container reinforcements • ACME STEEL ACCESSORIES—snips, tool mounts, reel stands, coil holders, coil trays.

When inquiring check FP 2372 on handy form, pgs. 2-3

BEE-LINE

Labels these Fine, Old Wines

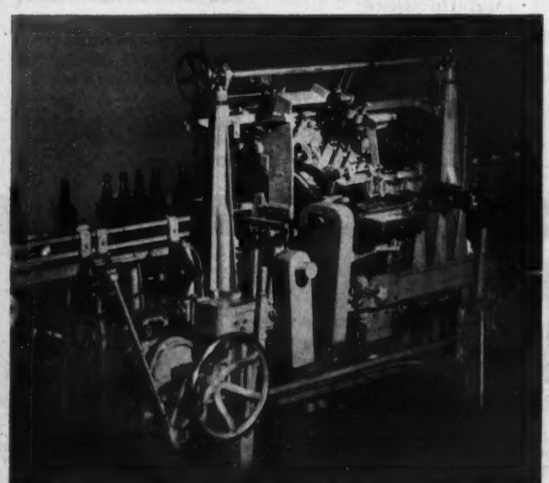
WORLD LABELERS

You recognize the brand by its attractive label: trim . . . clean . . . smooth . . . precision-applied to proclaim quality.

The most modern of automatic equipment does this efficient quality-and-quantity job for the wide range of fine imported Wines bottled at the New York City plant of Munson G. Shaw, Inc. The Labeler on the production line, to be sure, is the BEE-LINE.

BEE-LINE Labeling is profitable labeling. Profitable, because its neatness clinches many a sale. Its dependable action is time-saving, labor-saving. It pays off year after year with continuous application of body labels — front and back labels — neck and shoulder labels — medallions — on a variety of container shapes and sizes. BEE-LINE gives you production up to 2 a second, and more. Consult us for complete information; no obligation.

ECONOMIC MACHINERY COMPANY
WORCESTER 3, MASSACHUSETTS
DIVISION OF GEO. J. MEYER MANUFACTURING CO.
MILWAUKEE, WISCONSIN



When inquiring check FP 2373 on handy form, pgs. 2-3

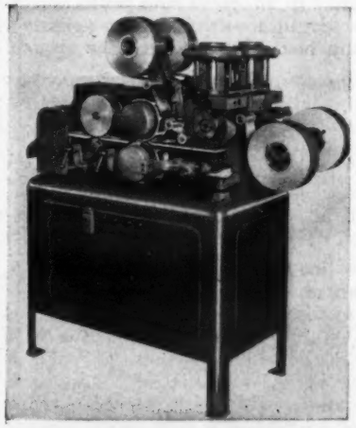
Self contained packing unit measures powders and seals into packets . . .

accurately fills up to 200 packets per minute from 1-¾ x 1-½" to 3 x 9" in size

Uses: Accurately measures powders such as powdered milk, chocolate, drugs and cosmetics and seals them into packets.

Features: Can heat seal up to 200 per minute of packets made from cellophane, foil, paper, or fiberless cotton.

Description: Material to be packed in metered amounts is fed onto a continuous strip of cellophane or other envelope material. As this continuous strip unreels from the stock roll and along a flat bed, the powder is deposited on it in individual mounds by the metering hopper. Another continuous strip then covers the powder and the combined assembly enters a thermostatically controlled heat-sealing roll. After roll has sealed edges and separated the mounds by sealing laterally across the strip, a cutoff knife separates the individual envelopes.



Unit produces up to 200 packets per minute

Packets may be from 1-¾ to 3" wide, and from 1-½ to 9" in length. After hoppers are filled and envelope stock properly threaded, operation is automatic. The Uni-Pak operates on 220 v, 60 cps single phase, being driven by a 1/3 hp motor. Base is of welded steel construction with enameled finish. Floor space requirements are approximately 2 ft wide, by 4 ft long. The unit stands five feet high.

Source: Uni-Pak is a development of E. G. Staude Div., The Sperry Corporation, Dept. FP, 2673 G University Ave., St. Paul 4, Minn. . . . or for more information check FP 2374 on handy form, pages 2 and 3.

Counts loaves of bread as they pass through wrapping machine . . .

system eliminates waste and losses between wrapping operation and final delivery to customers

Uses: For obtaining the exact tally of the production of wrapping machines handling bread, rolls or buns.

Features: An acccurate printed record of the daily production is secured which enables the company to tally this against their check-out records when loading trucks. The system eliminates waste and pilferage between the wrapping operation and end deliveries to the customers.

Description: The operating arm is a rod pivoted under the counter, and extending over the conveyor

GAIR

FOLDING CARTONS

Sell on Sight!

Smartly designed and brilliant multicolor Folding Cartons by GAIR are solving packaging problems for many manufacturers who are as meticulous about their packaging as they are about their famous products.

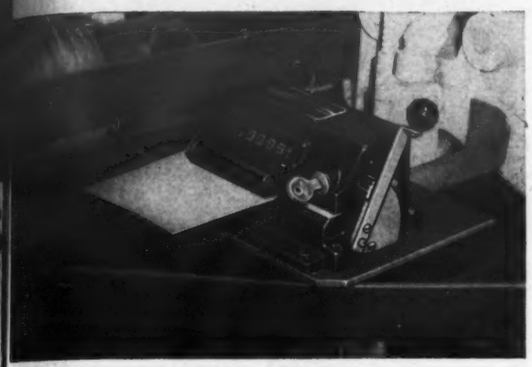
Sales, profits and prestige are increased with the SELL-ON-SIGHT magic of GAIR MULTICOLOR CARTONS.

WRITE TODAY for samples and technical information

*Reg. U. S. GAIR Pat. Off.

ROBERT GAIR COMPANY, INC.
155 EAST 44TH STREET, NEW YORK • TORONTO
PAPERBOARD • FOLDING CARTONS • SHIPPING CONTAINERS

When inquiring check FP 2375 on handy form, pgs. 2-3



Shows contact of trip arm against loaf (upper right), and printing lever of counter

where it contacts each loaf as it passes along the conveyor. To register the count, the rod is attached to the operating lever of the counter by a spring. When the run is completed, an upward thrust of the printing lever records the total on the inserted card.

Source: Productimeter 5-PVR-1-Q-R printing counter is a product of the Durant Manufacturing Co., Dept. FP, 1929 N. Buffum St., Milwaukee 1, Wis. . . . or for more information check FP 2376 on handy form, pages 2 and 3.

Has 2 speeds for dispensing set lengths of pressure sensitive tapes . . .

even high-tack tapes dispensed easily, and curl-free

Uses: For dispensing measured lengths of all types of industrial pressure sensitive tapes — widths up to 2". Especially suitable for production line sealing operations.

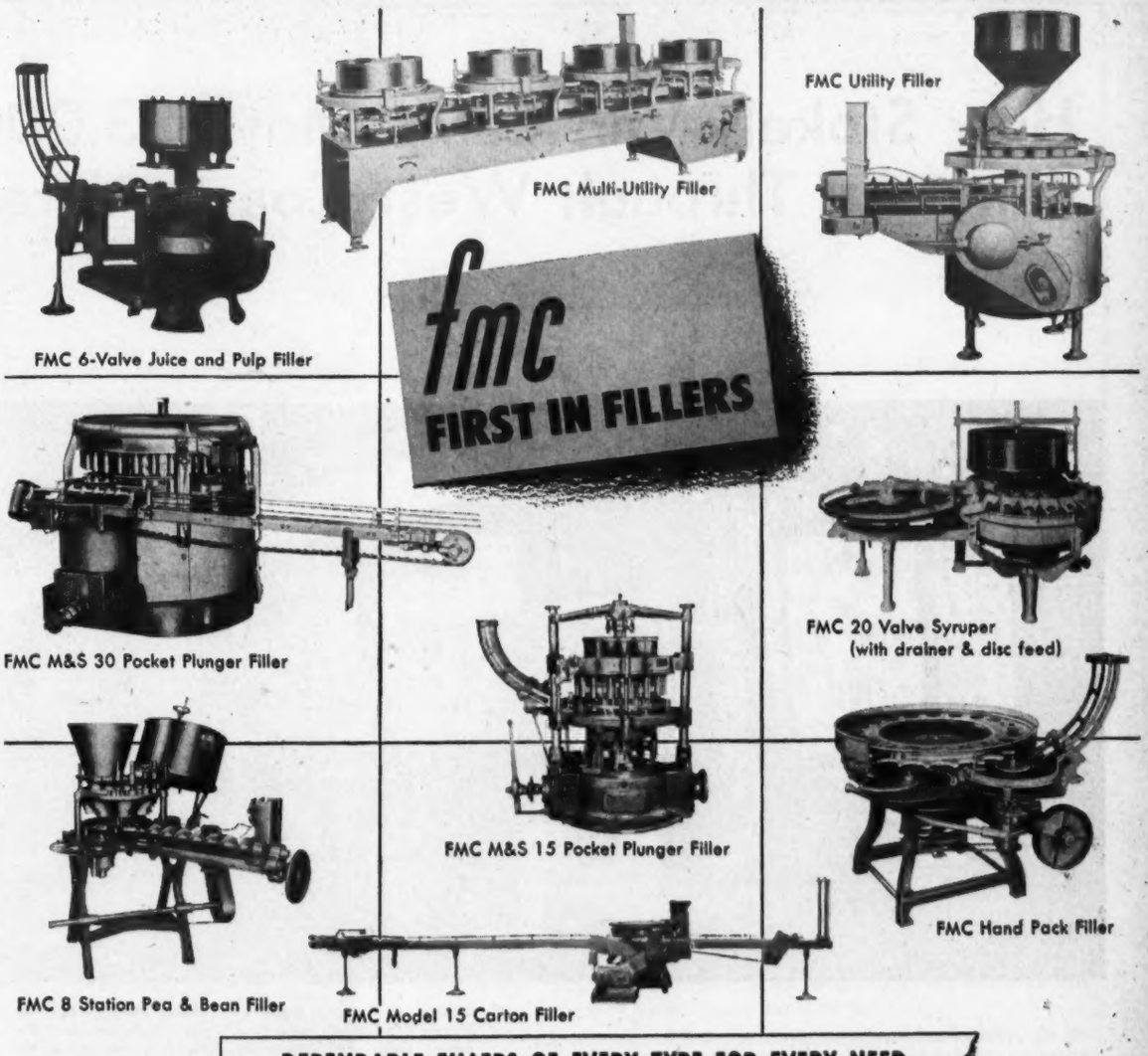
Features: Easily pulled feed crank dispenses even the high-tack tapes without having to fight or pull. Dispensing mechanism eliminates the extreme curling that will result in dispensing certain tapes.

Dispenses pressure sensitive tapes

Changing gears gives a choice of a long strip feed (10" per stroke), or short strip feeding. This is said to reduce fatigue on repetitive sealing operations.

Description: "Big Inch #20" has a 2-column measuring scale giving length settings for long or short strips without having to resort to wasteful trial and error methods. The unit may be mounted to the bench, where its swivel action can be utilized for turning as wanted. Three rolls of ½" tape can be inserted in the dispenser side by side for feeding three strips at once, or one economy wide roll inserted and a slitter attachment used for accomplishing the same purpose.

Source: Product of Better Packages, Inc., Dept. FP, Shelton, Conn. . . . or for more information check FP 2377 on handy form, pages 2 and 3.


FMC 6-Valve Juice and Pulp Filler
FMC Multi-Utility Filler
FMC Utility Filler
fmc
FIRST IN FILLERS
FMC M&S 30 Pocket Plunger Filler
FMC 20 Valve Syruper
(with drainer & disc feed)
FMC M&S 15 Pocket Plunger Filler
FMC Hand Pack Filler
FMC 8 Station Pea & Bean Filler
FMC Model 15 Carton Filler

DEPENDABLE FILLERS OF EVERY TYPE FOR EVERY NEED

Through long experience in working with canners for the best solution of particular filling problems, FMC has developed and perfected a complete line of filling machines designed to—

- **Speed up and simplify operations.**
- **Eliminate waste and loss through accurate product fill.**
- **Increase capacity through greater flow-line efficiency.**
- **Produce maximum quality pack at reduced cost.**

The fillers shown above are typical of FMC's line of skillfully engineered machines. All have been thoroughly tested and proved to provide canners with the highest quality filling standards. Whether your requirements call for canning liquid, semi-liquid, whole or granular products, or for packaging frozen foods, there's a FMC Filler built to do the job more efficiently and ecomonically.

Write for full information, or call your nearest FMC representative.

First in Diversified Food Equipment

fmc FOOD MACHINERY AND CHEMICAL CORPORATION

FOOD MACHINERY AND CHEMICAL CORPORATION
Canning Machinery Divisions

General Sales Offices:

EASTERN: HOOPESTON, ILLINOIS WESTERN: SAN JOSE 6, CALIFORNIA

When inquiring check FP 2378 on handy form, pgs. 2-3

How Stokely-Van Camp Moves 3,000,000 Cases Annually Through West Coast Warehouse

Design building with wide center aisle doors to drive trailer trucks direct to storage bays

« Unloading highway truck at proper storage bay in Stokely-Van Camp's warehouse is possible because of wide center aisle. Full pallets are unloaded and stored by one fork truck in about 15 minutes

Storing pallet loads at ceiling height is often necessary. Each pallet averages 3000 lb of canned foods »

PROBLEM: To handle 3,000,000 cases annually of Stokely-Van Camp products in the firm's recently opened Alameda, Calif., warehouse. The building with facilities for labeling, holds 850,000 cases. Both over-the-road trucks and freight cars must be unloaded and loaded rapidly to avoid costly waiting times for crews.

Solution: Warehouse layout was designed to operate eight fork lift trucks. Wide center aisle was built with 20 foot doors at both ends to permit over-the-road trucks to enter and stop at correct bay, for unloading. These trucks carry 14-18 pallet loads, each consisting of 50-60 cases and weighing 2800-3100 lb. One lift truck can unload each arriving truck.

There are 13 storage bays measuring 61 x 115 ft with 12 ft aisles between them. Lift trucks are narrow — 42 in wide with short wheel base, yet capable of handling 5000 lb. They can lift and stack to ceiling height and, if necessary, two pallets at a time.

Results: Over-the-road trailer trucks are unloaded in about 15 minutes with every pallet load placed directly in the proper storage bay. Outgoing trucks are loaded with 15-25 tons of canned foods in less than ½ hour.

Two labeling lines are fed by one fork truck which also

One fork truck feeds two labeling lines, picks up sealed cases after can labeling and moves them directly to storage or shipment

Loading 1600 cases of mixed products into freight cars is done in about two hours

picks up sealed cases at the other end of line and moves them directly to storage or shipment.

Freight cars are loaded at the rate of four daily with 1500-1600 cases of mixed canned foods in each car. These cases are gathered from stock piles located throughout warehouse and require 50-60 pickups by the lift trucks.

Source: This Certified Job Study #105 uses LT-50 fork lift trucks from Towmotor Corp., Dept. FP, 1226 East 152nd St., Cleveland 10, Ohio . . . or for more information check FP 2379 on handy form, pages 2 & 3.

Nail Directly Into Steel Floor of Highway Truck Trailer . . .

All metal body 500 lb lighter, reduces floor wear from fork truck loading, rough freight

USES: All steel floor of trailer is nailable for bracing loads and preventing load shifts.

Features: Strong nail-holding power made possible by proper groove spacing with automatic spacers placed on both male and female side of the channel. Nails

Nailing into all-steel floor of highway trailer. Diagram shows how curved groove gives clinching effect on nails driven into groove

driven into cargo retainers or chocks follow curved grooves locking them in place, holding tighter than in wood.

Floor surfaces withstand shock and grinding of rough freight and fork truck loading.

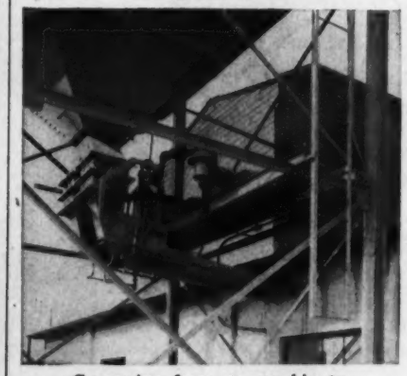
Flooring is made in sections, allowing for easy replacement.

Description: Trailer body is a one-piece, high ten-

(*Continued on page* 38)

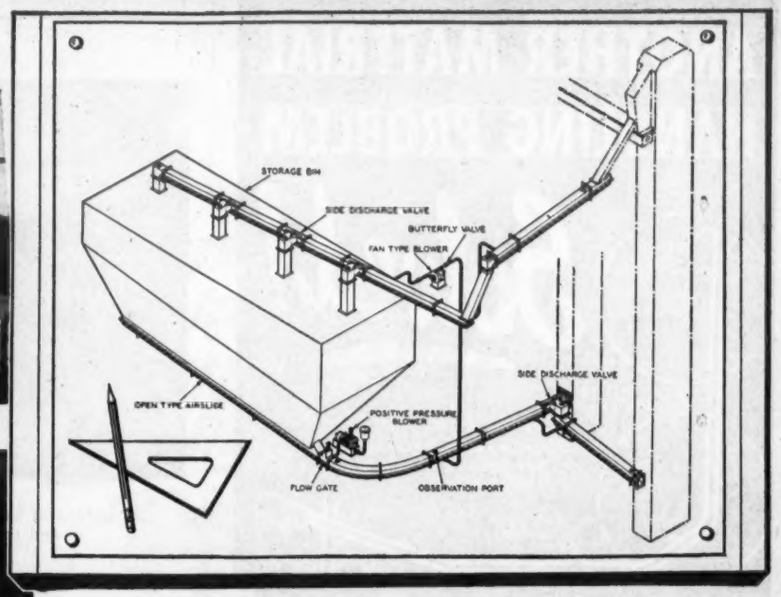
Conveying from elevator to storage bin underneath floor

Open-type Airslide in bin bottom conveying to elevator



Conveying from storage bin to weigh scales in plant

FULLER COMPANY, Catasauqua, Pa.
Chicago 3—120 So. LaSalle St.
San Francisco 4—420 Chancery Bldg.



F-H AIRSLIDE® CONVEYOR you profit by STARTING FROM SCRATCH

While your modernization program is in the planning stage, get ALL the facts about pneumatic conveying of fine, pulverized, and granular materials. Pneumatic conveyors permit economy and convenience in location of buildings and production equipment without the restrictions or straight-line limitations of mechanical conveyors. You'll save time, trouble, and money by pre-planning before installation of your conveying system.

Each job is unique. Each job requires individual study, an individual recommendation of the system best adapted to the purpose. Only specialists in the engineering and building of pneumatic conveying systems are fully equipped to make such recommendations.

Fuller is an organization of specialists in pneumatic conveying systems, and manufactures four basic types of conveyors, each designed to do a particular job in the most efficient and economical manner.

That's why we urge you to avoid possibly wasteful preliminary engineering—why we suggest you let us study your requirements and submit our recommendations, proposal drawings and estimates *before* you start construction. There is, of course, no obligation whatsoever.

Illustrated is the F-H Airslide, one of the four types of conveying systems we manufacture. It is a revolutionary conveyor, using low-pressure air which fluidizes fine, dry materials so that they flow—by gravity—like water. There are no moving parts—nothing moves but the material.

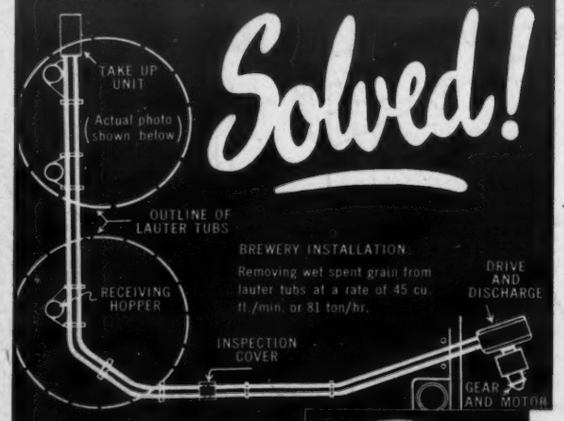
Fuller

DRY MATERIAL CONVEYING SYSTEMS AND COOLERS • COMPRESSORS AND VACUUM PUMPS • FEEDERS, AND ASSOCIATED EQUIPMENT

FH-19

When inquiring check FP 2380 on handy form, pgs. 2-3

ANOTHER MATERIAL HANDLING PROBLEM


TAKE UP UNIT
(Actual photo shown below)
OUTLINE OF LAUTER TUBS
BREWERY INSTALLATION
Removing wet spent grain from lauter tubs at a rate of 45 cu. ft./min. or 81 ton/hr.
RECEIVING HOPPER
DRIVE AND DISCHARGE
INSPECTION COVER
GEAR AND MOTOR

Solved!

WITH A

Hapman TUBULAR CONVEYOR

Actual photo of one Receiving Section and Take-up Unit

THE MODERN METHOD OF HANDLING WET OR DRY FLOWABLE MATERIALS

Hapman Conveyors consist of regularly spaced, circular flights or discs mounted on a special sealed pin chain operating within standard pipes or tubing. Hapman Conveyors operate efficiently with great flexibility of application in planes and angles utilizing minimum space and support requirements. They offer the maximum in sanitation, odor and explosion control because they are dust, vapor, and moisture tight. Power consumption is surprisingly low.

Hapman Tubular Conveyors are engineered to your particular material handling job. If you have a material handling problem, send a print or sketch and our engineers will submit a solution.

The wide range of materials that can be handled with efficiency and low cost by a Hapman Conveyor is illustrated by the following partial list:

STARCH — FLOUR — CHEMICALS — METAL CHIPS — WELDING FLUX — SLAG AND FOUNDRY SAND — GRINDING SLUDGE—GLASS CULLETT—MALT—COAL—TACKS—DUST.

WRITE TODAY FOR YOUR COPY OF OUR CATALOG GIVING DETAILS ON CONSTRUCTION AND OPERATION OF HAPMAN TUBULAR CONVEYORS

Hapman CONVEYORS, INC.

DIVISION HAPMAN-DUTTON COMPANY

KALAMAZOO MICHIGAN

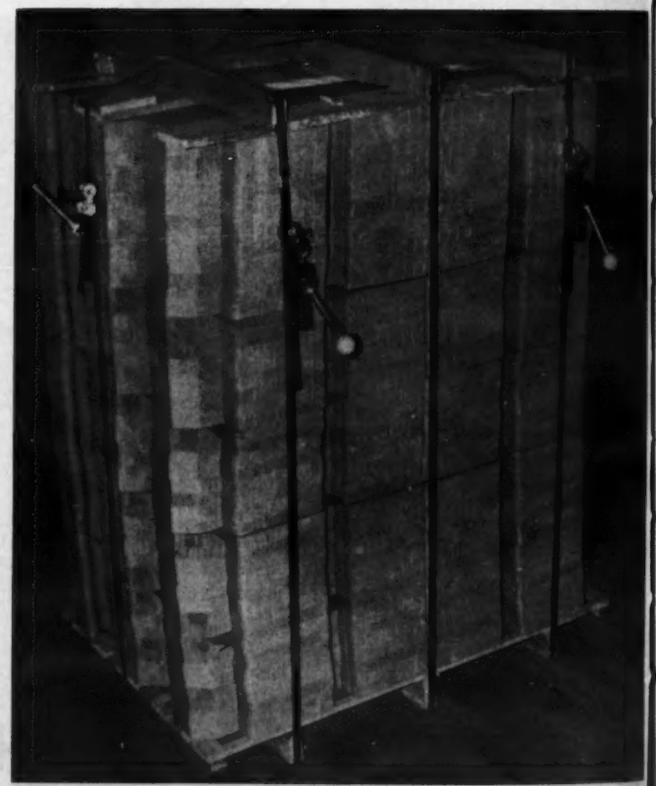
When inquiring check FP 2381 on handy form, pgs. 2-3

Old method of handling carton blanks involved wrapping and tying them into small bundles

Loading blanks into freight car is greatly facilitated when blanks are palletized

Carton Damage Sharply Cut by Palletizing Carton Blanks Instead of Wrapping Them in Small Bundles

New method speeds loading and unloading of freight cars and motor trucks, makes better use of warehouse space



Top brace permits steel strapping to be used without danger of damaging carton blanks. Straps are equally tensioned by separate stretching tools

PROBLEM: Nabisco's Marseilles, Ill., Box Board Mill supplies National Biscuit Company bakeries throughout the country with carton blanks die-cut into over 300 patterns. Under the old method of handling and shipping, which consisted of wrapping and tying the blanks into small bundles and moving the bundles with four-wheel trucks, considerable manpower was required and damage to blanks was rather high.

Solution: Introduction of strapped pallet loads and lift trucks eliminated bundle-by-bundle handling and truck pushing.

Pallets purchased in quantity, are strapped with flat steel strapping and stored in a compact space to be supplied to the finishing end of the carton blank presses as needed. Completed blanks are then stacked on pallets without being wrapped, and binder sheets are inserted at various heights to stabilize the columns on each skid. For additional strength and protection, a top brace having slots for flat steel strapping is used.

Cartons are compressed as flat steel strapping is applied by stretching tools.

Blanks too small to be stacked in columns are

packed in trays made from scrap board, after which they are then palletized.

Results: Damage, particularly at the destination, has been sharply reduced since the new system has been put into effect. Less time is required to load freight cars and motor trucks, while the handling job has been greatly simplified for employees. In addition, greater storage height enabled through the use of palletized loads has, in effect, increased warehouse space.

Source: Wire strapping and stretching tools are products of Acme Steel Company, Dept. FP, 2838 Archer Ave., Chicago 8, Ill. . . . or for more information check FP 2382 on handy form, pages 2 and 3.

Packages turn sharp corners on flexible gravity conveyor without side rail support . . .

demountable 8" sections, when assembled in 56" units, can be curved to 90° and adjusted to height

Uses: For installations where conveyors must be repositioned to meet changing requirements. Especially adapted for service where conveyor line must be routed around corner posts or other obstructions. Moves cartons, cases and similar unit loads within a capacity range of 1 to 350 lb per lineal foot.

Features: Flexible to any degree of curve: 45° in 32" lineal; 90° in 56" lineal; 180° in 112" lineal; 360° in 224" lineal or any combination of curves thereof. Any tangent, from a straight line to 360° curve, obtainable by pushing or pulling into position desired in less than half a minute. Height also adjusts quickly from 21 ⅝" to 343¼", with units providing for other heights available.

Rollers are so designed and arranged that they rotate

Gravity conveyor curves snugly around posts

under loads in such a manner that packages can be transported over entire route without use of side rails. Spacing between rollers is 2".

Description: Conveyors are assembled on the spot. Demountable sections are 8" from front to back. Seven sections give a maximum curve of 90°. Each roller diameter is 2". Spacing between rollers is 2". Spacing between sections when formed in straight line is 2". Rollers are split into two independent sections so that rotating speed is slower at inside radius than at outside radius when section is positioned in curve.

Finish is rust-proofing machinery enamel. Shipping weight is approximately 22 lb per lineal ft.

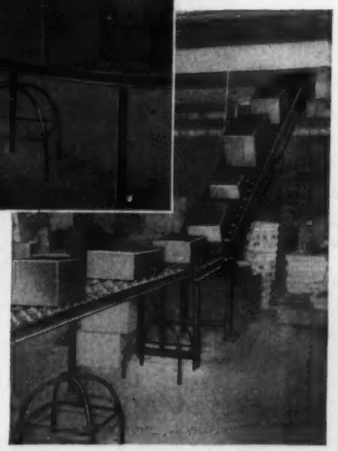
Source: Flex-Co conveyor is built by Berlin Chapman Co., Dept. FP, Berlin, Wis. . . . or for more information check FP 2383 on handy form, pages 2 and 3.

"HANDLES ANY KIND OF MATERIAL!"
"PERFECT FOR YARD USE!"
"STRONGEST MAST I'VE SEEN!"
"REALLY BUILT TO LAST!"
handling experts everywhere are talking about the
NEW TOWMOTORS!
"HANDIEST FORK TRUCK MADE!"
"MAKES TOUGH HANDLING EASY!"
TOWMOTOR
TOWMOTOR
No wonder the new TOWMOTORS are such a sensation . . . just look at these features:
• Extra heavy duty frame
• Drop forge beam steering axle
• Functionally styled cowl
• Full vision instrument panel
• Precision controls in easy reach
• Super-strength forks
• Maximum free lift
• Engineered tire equipment
• Double universal joint
• Precision mast construction
• Maximum operating comfort
• Heavy duty hydraulic brakes
• One piece drive axle assembly
• Heavy, industrial-type engines
Get the facts—see the new Towmotor 15-minute film, "What Makes It Tick?"
Model 480-P, one of five New Towmotors which include many new engineering features.
TOWMOTOR
THE ONE-MAN-GANG
FORK LIFT TRUCKS and TRACTORS
RECEIVING • PROCESSING • STORAGE • DISTRIBUTION
TOWMOTOR CORPORATION, Div. 44
1226 E. 152nd St., Cleveland 10, Ohio
☐ Send me more information on the new Towmotor.
☐ I'd like to see the new film, "What Makes It Tick?"
NAME
COMPANY
ADDRESS
CITY STATE
HOW MANY PEOPLE HAVE YOU TALKED TO ABOUT AMERICANISM TODAY?

When inquiring check FP 2384 on handy form, pgs. 2-3

A Profitable Solution

for Processing Plant Handling



Buschman

"ROLL-OR-WHEEL"

Conveyors

Processing plants requiring many production line changes from product to product have found that BUSCHMAN Portable Roller or Wheel type Conveyors, attached to powered floor-to-floor Beltevators, reduce the cost of excessive handling—yield large returns on a very small investment.

The BUSCHMAN "Roll-or-Wheel" Conveyor is available in 10 ft. and 5 ft. straight sections, curves, stands, 3-way switches and other accessories. These units can be moved and reset in a matter of minutes.

Write for bulletin No. 15 today.

THE E. W. BUSCHMAN CO., INC.
Clifton at Winton Place, Cincinnati 32, Ohio

PRODUCE MORE . . . FOR LESS
on
Buschman
Conveyors

When inquiring check FP 2385 on handy form, pgs. 2-3

MATERIAL HANDLING

Dump and gate barrows triple the load 1 man can handle . . .

both models have rubber tires, capacity of 12 cu ft

Uses: For handling a wide range of materials in operations in processing plants where carts and wheel barrows are customarily used.

Features: Equipped with pneumatic tires for quietness and to prevent damage to floors or exterior paving. Discharge gate model requires no lifting to discharge load. Made of heavy-gauge steel throughout.

Description: Made in two models with and without discharge gate. Former unit empties quickly, safely, and completely by tipping slightly. Discharge gate model is easily operated by trip bar. Specifications are

No-tip discharge gate barrow

identical except for inclusion of discharge gate. Capacities are 12 cu ft or 1,800 lb. Top body length, 42"; body depth, 36"; body width, 21"; axle length overall, 32"; height from floor (front), 48"; from floor (rear), 41".

Source: Speed Barrows are built by American Conveyor Co., Dept. FP, 1115 West Adams St., Chicago 7, Ill. . . . or for more information check FP 2386 on handy form, pages 2 and 3.

No need to lift cartons when moving them . . .

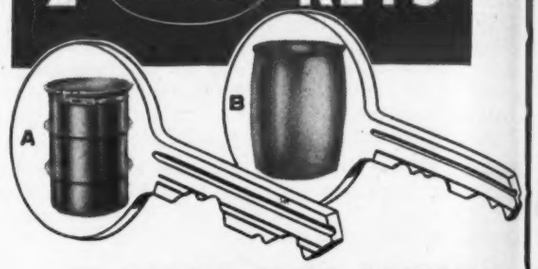
hand truck eliminates necessity for any manual handling

Uses: Two-wheel hand truck designed to handle 12 x 12 x 18" cardboard containers. Loaded containers may weigh up to 300 lb.

Features: With this truck, one man can pick up, move, position, and deposit container without ever touching it with his hands.

Description: Truck has short nose

2 Hackney KEYS



TO BETTER FOOD SHIPPING

(A) STAINLESS STEEL STRAIGHT SIDE DRUMS. Long life. Resistant to Corrosion. Attractive. Lightweight. Strong. Easily Cleaned.

(B) ALUMINUM SEAMLESS BILGED BARRELS. Lightweight. Sturdy. Economical. Easy to clean and keep clean. Friendly to food.

Both these Hackney products are returnable containers, assuring food shippers many years of low-cost, dependable service. They have completely removable heads — with two types of closures: the famous, quick-acting Toggle-tite and single bolt. Also in galvanized and tinned steel. Send for full details.

Hackney **PRESSED STEEL TANK COMPANY**
Manufacturer of Hackney Products

1459 S. 66th St., Milwaukee 14...1349 Vanderbilt Concourse Bldg., New York 17...211 Hanna Bldg., Cleveland 15...936 W. Peachtree St., N.W., Room 117, Atlanta 3...208 S. LaSalle St., Room 799, Chicago 4...557 Roosevelt Bldg., Los Angeles 14

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

When inquiring check FP 2387 on handy form, pgs. 2-3

Penicillin Mold Elevated by HAMMOND Screw-Lift

Abbott LABORATORIES

Receiving end of Screw-Lift showing discharge from mixer to Screw-Lift Feeder.

Abbott Laboratories, Manufacturing Pharmaceutical Chemists at North Chicago, Ill., use a Hammond Screw-Lift in their processing of Penecillin Mold. Twin Screw Mixers discharge into Screw-Lift feeder, then Mold is elevated 21'-6" to distributing conveyors handling 500 cu. ft. per hour (30lb per cu. ft.)

Arrangement is compact, very little space is required and utmost cleanliness is achieved. Any discharge condition can be met with Screw-Lift and it works in unison with any processing procedure.

Hammond Screw-Lifts elevate any free-flowing bulk material from receiving point to storage or to processing departments to packaging.

Write for form No. M-500-2.

Screw Conveyor Corporation
701 HOFFMAN ST. HAMMOND, IND.
ENGINEERS HAMMOND PRODUCTS MANUFACTURERS
TRADE MARK REG. U.S. PAT. OFFICE

When inquiring check FP 2388 on handy form, pgs. 2-3

Neff & Fry Bins
defy the elements

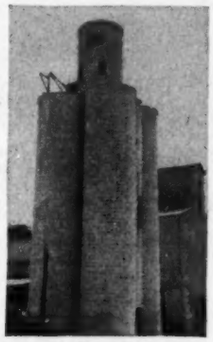
Coal barges were tied up to Neff & Fry Bins during an Ohio River flood. After the waters receded, the bins were as sound as ever.

Tornadoes have destroyed adjacent buildings without damaging the walls of Neff & Fry Bins.

More important, normal year-'round weather has little effect on the Super-Concrete Staves of which Neff & Fry Bins are built. The staves are hard and dense. They do not rot, burn, rust, or spall. They require no face-lifting and painting, although owners sometimes paint them for esthetic reasons.

All the distinctive advantages of Neff & Fry Bins are explained in our folder, "Bins with the Strength of Pillars." Be sure to read it before you purchase structures for handling flowable bulk materials. Write for it now while the subject's on your mind.

Not exported except to Canada and Mexico.



Four Neff & Fry Grain Bins at Liberty, Ind.

THE NEFF & FRY CO. • **192 Elm St. Camden, Ohio**

SUPER-CONCRETE STAVE STORAGE BINS ◀ NEFF & FRY

When inquiring check FP 2389 on handy form, pgs. 2-3

Custom-engineered to meet your specific requirements, Wissco Metal Processing Belts are furnished in standard or special mesh constructions... in conventional and spiral weaves... and with rod reinforcements for high-temperature service. Supplied in correct metal or special alloy for resistance to heat, abrasion and chemical action.

For specific information write or phone our nearest sales office.

THE COLORADO FUEL & IRON CORPORATION – Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION – Oakland, California
WICKWIRE SPENCER STEEL DIVISION – Clinton, Massachusetts

WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL & IRON CORPORATION
CF&I

When inquiring check FP 2390 on handy form, pgs. 2-3

No need to touch that box

blade and hinged hook arm to hold box in position. Truck frame is made from ¾" pipe; wheels are rubber tired with roller bearings for quiet operation.

Source: Carton truck is made by Thomas Truck & Caster Co., Dept. FP, Keokuk, Iowa . . . or for more information check FP 2391 on handy form, pages 2 and 3.

Foreign matter excluded by sealed-hub design of wheel . . .

protects built-in bearings from wear, deterioration

Uses: For general service.

Features: Design of wheel provides for virtual exclusion of all foreign matter responsible for excessive bearing and axle wear and deterioration. A convenient fitting permits periodic lubrication of bearings and axle without tie-up of equipment needed for production schedule.

Description: Wheel is made of cast aluminum with a solid rubber tread. Available in sizes from 6 to 20" diameter.

Source: Sealed-hub industrial wheels are made by Aerol Co., Inc., Dept. FP, 2820 Ontario St., Burbank, Calif. . . . or for more information check FP 2392 on handy form, pages 2 and 3.

BASIC FACTS ABOUT MODERN MATERIALS HANDLING

HOW IT WORKS — WHAT IT DOES— WHAT IT SAVES

Study of major importance to business and industry is made available by CLARK

A practical, profitable way to produce more goods with the same amount of human effort, is presented simply and graphically in a new booklet offered by the Industrial Truck Division of the Clark Equipment Company, of Battle Creek, Michigan.

This booklet points up technological advances in materials handling operations that are effecting extraordinary benefits for industry—such as faster production, increased economy and efficiency, improved human relations, lower accident and damage rates, quickened distribution and substantial cash savings. Simply and directly it describes tested and proved means to help speed up and perfect the imperative integration of a military and a civilian economy

2-BILLION SAVING POSSIBLE

Concretely, this study points up a quick and certain way for Industry to save some $2,000,000,000* annually at a time when the country, faced with a rearmament program of 50 billions a year for at least three years, is in desperate need of every possible mechanical aid to save time and speed production. Many advantages in other directions, not reckoned in dollars and cents, will be recognized at once by every reader.

This new CLARK study is neither fancy nor complex. It is a well-illustrated, simply-written exposition of the sound and sensible fundamentals on which modern materials handling techniques and practices are based. It describes ways and means of getting the most out of fork-lift trucks, powered hand trucks and industrial towing tractors, at the least possible cost. For the many businesses which have not yet adopted modern handling methods and machines, the booklet will be found invaluable. For the thousands of progressive businesses already employing modern methods and machines, it is just as valuable as a check against omissions, abuses and opportunities for full achievement of production goals and potentials.

SEND FOR YOUR COPY

To get a copy of *"Basic Facts About Materials Handling"* fill out the coupon, attach it to your business letterhead and mail it to the *Clark Equipment Company, Industrial Truck Division, Battle Creek, Michigan.* If you want additional copies for key personnel, they are available in reasonable quantities.

**Materials Handling Case Book; McGraw-Hill Book Co., Inc. 1951*

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS
AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 15, MICHIGAN
Please send the following: ☐ BASIC FACTS ☐ SAFETY SAVES ☐ CONDENSED CATALOG ☐ MOVIE DIGEST
Name_____
Firm Name_____
Street_____
City_____ Zone____ State_____
AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

When inquiring check FP 2393 on handy form, pgs. 2-3

to make dough feather-light

just press a button

You can take all of the grunt and groan out of handling dough troughs by pushing the buttons on an R & M hoist control pendant. R & M's dual unit dough trough hoist gives you complete control of the trough at all times. Hoists may be operated individually —for tilting the trough either way—or together for raising and lowering. Mounted on standard I-beam runways, you can serve a double row of mixers and dividers quickly, efficiently, and at substantially lower cost than by manual handling. Waste from spilling or slipping is eliminated; skilled manpower puts in more productive hours at work—traffic aisles are kept clear—costs in mixing and cutting departments definitely go down.

Your nearby R & M representative can bring a wealth of materials handling experience to bear on your specific problems. Call him in for a survey. There is no obligation involved and his recommendations may point the way to more efficient overall operation in all departments. Write for bulletin No. F101P

TAKE IT UP WITH

ROBBINS & MYERS INC

HOIST AND CRANE DIVISION, SPRINGFIELD 99, OHIO

When inquiring check FP 2394 on handy form, pgs. 2-3

6 ft square pallet collapses to 6 x 9 x 66 inches for storage . . .

dimensions can be adjusted to handle any size load; types available for light and heavy duty

Uses: Collapsible pallets are recommended for use where storage space is limited or where loads of varying size are handled. They also have the advantage of using only one-fifth of extended space when returned empty.

Features: Pallet dimensions can be adjusted so that a pallet which is basically 6 ft square may be made 114 x 30" at maximum length, or 45 x 45" for minimum area. Same pallet collapses to 6 x 9 x 66" for storage or shipping. Smaller sizes are also stocked.

Description: Pallets are all-wood construction with the exception of metal clamp and eccentric locking unit in center. Three types are built covering duty with light and heavy loads on fork truck as well as lift trucks. Rated loads range from 2400 lb for the largest to 3000 lb for the smallest of the heavy duty types. The figures

Extended and collapsed positions of Spring A-C pallet

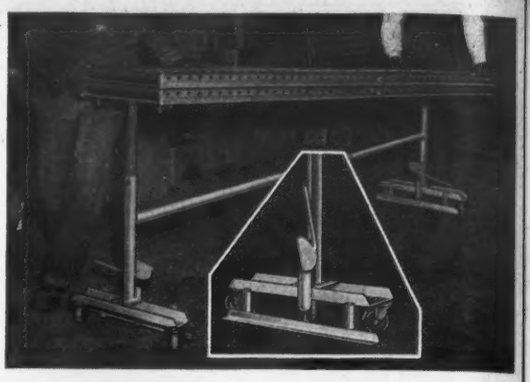
for light duty are 1400 and 2000 lb, respectively. When bulky loads having low rigidity are handled, a layer of cardboard or light framework is reported to convert the pallet satisfactorily.

Source: "Spring A-C" pallet is manufactured by Spring Wood Products, Inc., Dept. FP, Austin Road, Geneva, Ohio . . . or for more information check FP 2395 on handy form, pgs. 2 and 3.

Testing, handling equipment for grain products shown

Catalog of 143 pages covers various types of testing and handling equipment for agricultural products. As an aid in selection, one part shows grading and testing equipment under specific commodities and trade groups. For example, in the testing of grain, equipment and corresponding page numbers in the catalog are listed for the following operations: determining moisture, extracting sample, reducing sample size, determining wt per bu and dockage.

Among the items described in the publication are: bag holders, blowers, corn shellers, germinators, moisture testers, respirators, samplers, seed analysis equipment, and wt per bu testers. "1950-51 Seedburo Catalog" is issued by Seedburo Equipment Co., Dept. FP, 618 W. Jackson Blvd., Chicago 6, Ill. When inquiring specify FP 2395A on handy form, pages 2 and 3.



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Save Money on Your Handling Jobs

Standard 5' and 10' sections and 45° and 90° curves on portable tripod stands or portable section stands (as illustrated) with or without "Pelican" Floor Lock. (see insert).

Ideal for warehousing, loading and production line use. Easy to handle and move.

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Belt type Horizontal and Floor-to-Floor "Power Helpers"

Live Roller CONVEYORS

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When inquiring check FP 2396 on handy form, pgs. 2-3

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offers

new FILTERING EFFICIENCY

NO CLOTH BAGS • NO SHEETS • NO PAPER PADS SELF-PROLONGING FILTRATION CYCLE • COMPLETE PRODUCT RECOVERY THOROUGH AUTOMATIC CLEANING

Modern, faster, much more economical filtering of liquids . . . with the rigidly proven GROEN Stainless Steel Sanitary VERTICAL TUBE FILTER . . . a new member of the widely used GROEN Line of Industrial Processing Units. Shown is Model LSP40, available portable or stationary. Effects COMPLETE PRODUCT RECOVERY. Greatly prolongs filtering cycle. Exclusive backwashing method eliminates disassembly. THOROUGH CLEANING a matter of mere minutes. No hosing or scraping. Saves BIG on labor and time, yet provides the finest possible filtering. Read details in Bulletin FI-1. Write for it today.

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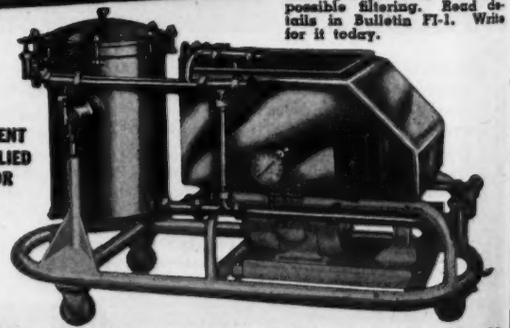

30 Church St., New York 7; 7 Front St., San Francisco 11

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When inquiring check FP 2397 on handy form, pgs. 2-3

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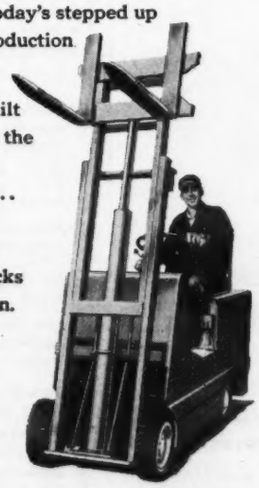
They bring to your materials handling problems new shortcuts — new savings in man-hours — new opportunities to answer today's stepped up demands for increased production and faster deliveries.



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YALE HAND TRUCKS • YALE HAND AND ELECTRIC HOISTS

When inquiring check FP 2398 on handy form, pgs. 2-3

Chain drive selection

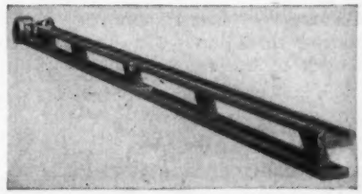
Chain drive catalog HD-51 is available from Whitney Chain Company, Dept. FP, 237 Whitney St., Hartford 2, Conn. When inquiring specify FP 2399 on handy form, pages 2 and 3.

Materials move smoothly in uniform flow within oscillating trough . . .

motion imparted by constant stroke eccentric

Uses: Handles loose bulk materials at moderate capacities. Typical applications include beans, bone meal, coffee, flour, peanuts and sugar.

Features: Design offers advantages where handling of foodstuffs makes cleanliness a factor. Operating principle achieves movement of material with practically no wear on metal troughing. Escape of dust or gases can be eliminated by addition of a metal cover, with flexible connections, at loading and discharge points.



Conveyor oscillates gently

Description: Oscillating conveyor embodies a one-piece metal trough with high sides, supported on simple one-piece flexible members which function as springs in absorbing the energy of the trough movement at each end of the stroke.

Conveyor trough is normally 4" deep and can be furnished in standard widths of 8 to 24". Made of 10 or 12 gauge steel, stainless or corrosion resisting steel, or other special material. Motion is imparted to trough by a roller-bearing constant-stroke eccentric. Uniform, continuous flow of material is assured.

Conveyor is very compact. Troughs in lengths of up to 100' can be furnished. Dividers can be installed to convey several materials simultaneously. Discharge is possible at any point.

Source: "Flexmount" conveyor is built by Link-Belt Co., Dept. FP, 307 N. Michigan Ave., Chicago 1, Ill. . . . or for more information check FP 2400 on handy form, pages 2 and 3.

Check These Advantages of
DRACCO Pneumatic Conveyors
for low-cost handling
of YOUR Bulk Materials

When selecting equipment to handle your bulk granular or powdered materials, your logical choice is a "Performance Proved" Pneumatic Conveyor, engineered by Dracco.

LESS LABOR
The automatic, continuous action of a Dracco Pneumatic Conveyor permits sizeable reductions in manpower requirements. In unloading a hopper bottom car for example, one man need be present only 25% of unloading time.

NO DUST
Completely enclosed Dracco Pneumatic Conveyors mean a clean plant, no product contamination, and no material losses.

SPACE-SAVING
A Dracco Pneumatic Conveyor requiring only the space of a 6 inch pipe, releases valuable plant areas for productive use. Vertical heights, horizontal distance, walls, and floors are no obstacles

GREATER SAFETY
The high operator safety factor possible with a Dracco system is a well-recognized advantage. Safety plus a clean plant provide increased production.

LOW MAINTENANCE
Simplicity and few moving parts reduce maintenance costs to an absolute minimum.

LOWER MATERIAL COST
Another cost-saving feature is that a Dracco system permits buying materials in low-cost bulk form.

Dracco Pneumatic Conveyors are "Performance Proved". High operational efficiency of each installation is assured by exact engineering to individual requirements. If your materials handling problem involves the movement of bulk chemicals, grains, or other granular or powdered materials, you can profit from the advantages provided by Dracco Pneumatic Conveyors.

DRACCO CORPORATION
4035 E. 116th St., Cleveland 5, Ohio
415 Lexington Avenue, New York 17, N.Y.

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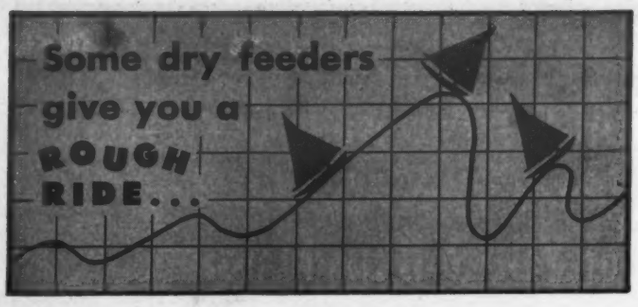
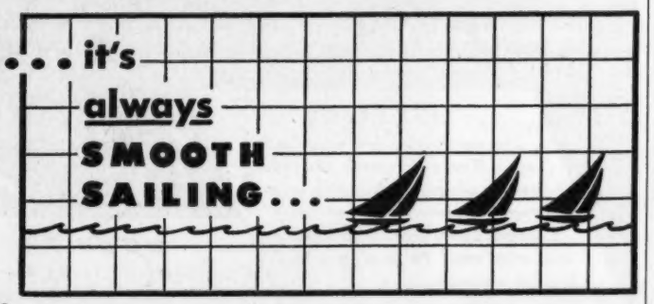
Performance Proved
PNEUMATIC CONVEYORS

When inquiring check FP 2401 on handy form, pgs. 2-3

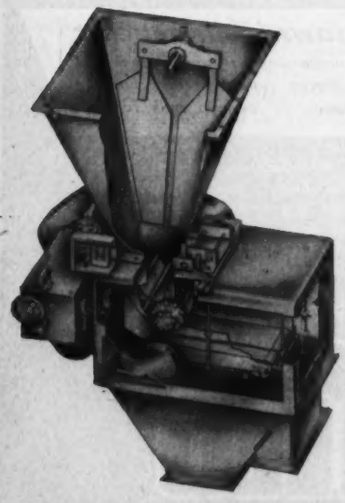




with

OMEGA CHEMIZER

This Belt-Gravimetric (weighing) Feeder delivers dry materials with a smooth, steady flow. OMEGA CHEMIZER incorporates a new type of feeding control which automatically compensates for variations in density of the material you're feeding. Some feeders "hunt" up and down, continually — but not the CHEMIZER. Whatever the material — flour, sugar, salt, magnesium carbonate, seasoning, beatrine, or any other dry ingredient — you can rely on this Feeder to give the right feed, minute after minute, hour after hour, day after day . . . accurate within 1% over the entire range specified.



Omega CHEMIZER is a *complete* feeder, including hopper agitators, alarms, dust-tight housing, sampling chute, positive non-flooding feeding mechanism, and other important features contributing to accuracy and ease of operation. For Bulletins 35-G5 (Omega CHEMIZER) and 10.20-F5 (Blending Dry Foods Continuously), address Omega Machine Co. (Division of Builders Iron Foundry), 388 Harris Ave., Providence 1, Rhode Island.

Omega manufactures a complete line of volumetric and gravimetric feeders for dry materials and for gravity feeding of liquids and solutions:

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OMEGA

The Last Word in Feeders

OMEGA

When inquiring check FP 2402 on handy form, pgs. 2-3

MATERIAL HANDLING

(*Continued from page* 31)

sile welded steel construction. It is 500 lb lighter than composite trailers due to its nailable floor. Both dry-freight and open-top styles are available in lengths of 20-35 ft, and capacities of 20,000 or 25,000 lb in the single axle models, or 18,000 lb per axle for tandem models.

Single axle units are provided with "multi-rate" spring suspension; tandem models have patented gravity-tandem suspension and torsion bar springs.

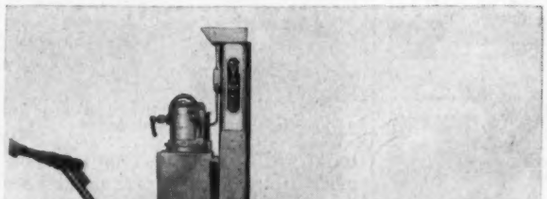
Source: Model FDL corrugated all-steel trailer with nailable steel flooring built by Fruehauf Trailer Co., Dept. FP, 10940 Harper Ave., Detroit 32, Mich. . . . or for more information check FP 2403 on handy form, pages 2 and 3.

Shorter hand-led fork truck more maneuverable for cramped stacking . . .

maximum overall length now seventy-one inches

Uses: Hand-led fork truck for handling pallets and skids.

Features: Latest "Shortie Hi-Lift" truck is 10" shorter than previously announced models, making the length of the truck from the front to face of lifting



Hand-led, battery powered fork truck

forks merely 23½". Result is increased maneuverability, making it possible to stack materials in narrower aisles.

Description: Specifications: battery powered; 36 and 48" fork lengths; 80, 94, 100, 110, and 120" lifting heights; 3000 and 4000 pound lifting capacity.

Source: Development of The Moto-Truc Company, Dept. FP, 1953 E. 59th St., Cleveland 3, Ohio . . . or for more information check FP 2404 on handy form, pages 2 and 3.

Comprehensive catalog details material handling equipment

Subjects covered in 44-page material handling equipment catalog include hand and electric hoists; fork trucks; lift trucks; platform trucks; pallet trucks; and various types of scales. Series of fork truck accessories that extend truck applications is also presented. Items are briefly described, but excellently illustrated — largest part of catalog consists of numerous application photos.

"Materials Handling Equipment" is issued by Yale &

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☐ **Metallic Filter Cloth Bulletin No. 81.** Illustrates and describes most widely used types of filter screens and leaves for breweries, chemical plants, sugar refineries, sewage plants and others.

☐ **Woven Wire Conveyor Belts Bulletin No. 82.** Technical charts set forth Comparative Ultimate Strengths of Rod-Reinforced, Balanced and Sectional Belt weaves in meshes from 1" to ¼" mesh.

☐ **Woven Wire Conveyor Belt Bulletin No. 86.** Illustrates and describes conveyor belt installations in glass plants, bakeries, rubber manufacturing, ice cream plants and food packing.

☐ **Woven Wire Conveyor Belt Bulletin No. 89.** For food and pottery plants. Describes belt uses and also shows special belt attachments and selvages.

☐ **Metal Specialties Bulletin No. 99.** Describes and illustrates Cambridge facilities for design and fabrication of metal specialties for handling bulk parts through hot, cold, abrasive, corrosive or wet processes.

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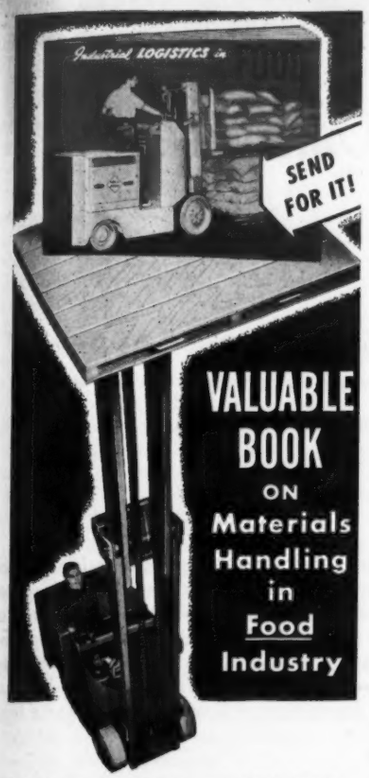
When inquiring check FP 2405 on handy form, pgs. 2-3



HIGH PRODUCTION with LESS MAN-POWER is one of the benefits described in this pictorial booklet entitled "Industrial Logistics in Food". It shows how E-P truck users sharply reduce handling costs in the Procurement, Processing and Distribution of food products. The many illustrations present a preview of the materials handling pattern that the MAN can establish for you.

Learn about the built-in dependability of Elwell-Parkers—for example, how Diamond Crystal Salt got 35 years' steady service from their first E-P truck . . . See the various types illustrated that provide the answer to every truck need in the food industry . . . claim your share of Elwell-Parker's greater materials handling experience . . . Write NOW for "Industrial Logistics in Food." The Elwell-Parker Electric Co., 4186 St. Clair Avenue, Cleveland 3, Ohio.

ELWELL-PARKER
Power Industrial Trucks
Since 1906

When inquiring check FP 2406 on handy form, pgs. 2-3

MATERIAL HANDLING

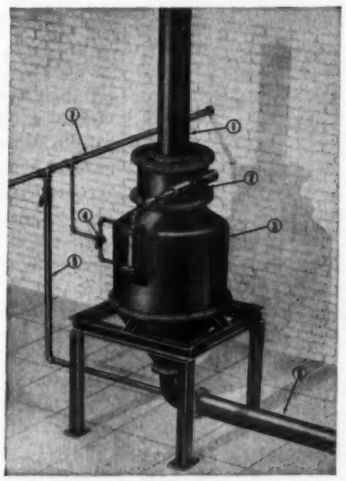
Towne Manufacturing Company, Philadelphia Div., Dept. FP, 11,000 Roosevelt Blvd., Philadelphia 15, Pa. When inquiring specify FP 2407 on handy form, pages 2 and 3.

Air activation, fluidizing assure rapid flow of bulk material through pipe . . .

moves granular, lumpy mixtures through any elevation at no limit in distances

Uses: Transporting granulated, lumpy and all bulk, dry materials to remote delivery points. Handles flour, salt, starch sugar and variety of food materials.

Features: Uses either low or high pressure air. Systems may be easily installed. Lines may go through and around existing obstructions. No moving parts are involved, reducing maintenance to a minimum. Material handled is fully enclosed from loading point to point of discharge for dustless operation.



Conveyor pressure vessel, air material inlets and outlets

Entire system controlled by one operator. Rapid handling of heavy tonnages at low cost per ton. Conveyor is self-cleaning; thus, there is no contamination from previous loads.

Description: Handles ounces or tons through small pipe diameter by pressures from 10 to 100 psi. Pipe sizes are determined by the capacities required and distances material is to be conveyed. Air activation and fluidizing of the material is accomplished by admitting air into pressure vessel. This creates a fluid mixture of air and solids. The material immediately begins to flow through the pipe line just as a fluid would flow under pressure. Pressure without this aeration would not be adequate and would cause packing of materials that have a tendency toward caking in a pipe line.

Illustration shows sequence of operation. 1) Material supplied from such sources as overhead bins or by manual or mechanical means. 2) Gate operation is manually, automatically or remotely controlled by compressed air or electric motor. 3) Pressure vessel (Flo-veyor) can be built to accommodate different capacities per hour.

4) Hand or remote control operated air cylinder closes gate and stops flow of material when pressure vessel is filled. 5) High pressure or low pressure air is introduced at points necessary to aerate and fluidize material. 6) Pipe sizes provided to requirements. 7) Air is supplied from low or high pressure compressors through header to various points.

Source: Flo-veyor conveyors are built by The Brady Conveyor Corp., Dept. FP, 20 W. Jackson Blvd., Chicago, Ill. . . . or for more information check FP 2408 on handy form, pages 2 and 3.

Glistening Protection

AGAINST PRODUCT CONTAMINATION

AN examination of Tri-Clover sanitary fittings, valves, pumps and specialties will convince you that here is your finest protection against product contamination. The close grained, flawless surface and the exclusive Hi-Gloss finish of Tri-Clover products truly exemplifies the positive protection and cleanliness that is so necessary in processing foods and beverages.

Tri-Clover has spent over 30 years in developing the most complete line to satisfy every product demand and piping problem. Careful, precision fabrication methods have developed this superior line. Leak proof . . . easy to install . . . easy to disassemble and clean . . . long life . . . completely sanitary . . . exclusive designs . . . these are the features that benefit Tri-Clover users.

Satisfy all your fitting, valve, pump, tubing and piping requirements from this one dependable source. Specify Tri-Clover throughout your plant, and assure yourself of the finest. See your nearest jobber or write us for information.

No. 7 SANITARY TEE
No. 12HR COMPLETE SANITARY UNION
No. 21 ADAPTER — MALE NPT and SANITARY THREAD
No. 60Q TWO-WAY ECCENTRIC VALVE—Designed especially for bottler's use.
No. 60T STRAIGHT WAY COMPRESSION VALVE
No. 60T "T"-TYPE COMPRESSION VALVE
SPECIAL "SUPER SPEED" BOTTLER'S TOOL SET . . . contains all tools necessary to completely install and service 1-inch sanitary lines, in handy case.
TRI-CLOVER CENTRIFUGAL PUMPS . . . a complete line of non-clogging Sanitary and Industrial types for dairy and food processing — bottling — chemical and general industrial use.

EXPORT DIVISION — 8 So. Michigan, Chicago 3, U. S. A.

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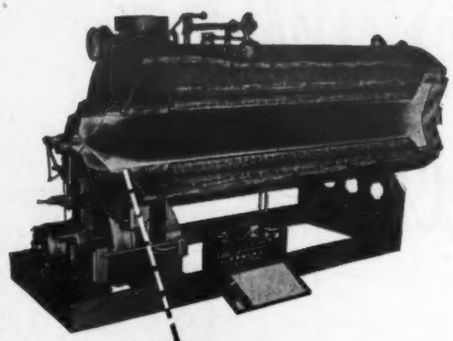
THE Complete LINE

When inquiring check FP 2409 on handy form, pgs. 2-3



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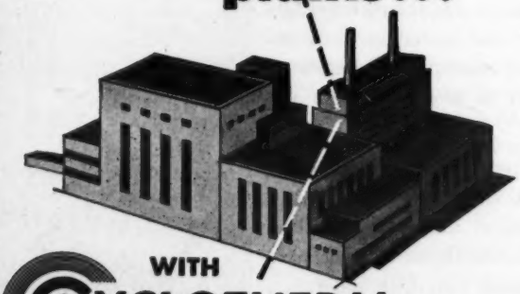

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Boilers are designed for oil or gas operations from 18 thru 500 h.p., 15 to 200 lbs. operating pressure.

CYCLOTHERM CORP. Oswego, N.Y.

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Years Ahead In Steam Generation

Chemical Additives, Chemical Contaminants and Proposed Legislation

Hugh Craig, Editor of "Oil, Paint and Drug Reporter" comments on control of the use of chemicals in foods

PERTURBATION of several kinds currently exists in food, agricultural, chemical, and governmental areas by reason of concern over the potential, even actual, hazardousness of contamination of food with chemicals. The hazards are presented from two angles. One is the use of chemicals to improve foods. The other is the use of chemicals to assure the production of foods. The perturbations are confounded by more than a little confusion.

There is a bill in congress to require the authorization by the Food and Drug Administration of the use of chemicals for the two purposes noted above. Its objective is to obviate detriment to human health and life. As is customary in relation to protective legislation, there is much opposition to that bill. But there is a feeling in certain chemical circles that there is not enough. That, of course, is a matter of point of view.

The use of chemicals in or on foods has been made the concern of a select committee of the lower house of congress. That group of seven representatives, with the help of legal and technical counsel, has been delving in the matter for a year or so. It plans to go on delving for the rest of this year. The bill in congress was sponsored by a member of the committee, but has not been approved by that body—and doubtless will not be. The bill in question was drafted by the Food and Drug Administration as an amendment to the food, drug, and cosmetic law.

One of the bothers of those who are interested (negatively) in the congressional bill is that the chemical concerns which would particularly be affected by its enactment show little interest in the hearings or other attention to the measure. There appear to be two reasons for the alleged apathy. One is that the bill will not be passed, because the house select committee will introduce and push its own measure. That is expected to be very much like the pending one. The other reason is that there are too many misrepresentations of the effects of the enactment of the pending bill.

Foremost among the fallacious ideas concerning the pending bill is the frequently expressed one that denial by the Food and Drug Administration of an application to use a certain material within the purview of the bill would close interstate commerce to that material for any use whatsoever. Under the language of the bill, that is not true. The bill has to do only with a "chemical additive," and it defines a "chemical additive" as "any substance . . . intended to be used (1) to preserve or alter any food or any characteristic thereof, or (2) in substitution, wholly or partly, for any food or any ingredient thereof, or (3) as a pesticide or for other purpose in producing, processing, packing, or holding food if such use is likely to result in contamination of such food." The proposed amendment would have no more application to commerce in a chlorine compound for use as a textile bleach than the present food, drug, and cosmetic act has to epsom salt when sold for the delustring of rayon. Regulations, no doubt, would seek to prevent illegal conversion of a material sold for a legal purpose.

The prevention of hazardous contamination of food by the intentional introduction of an improving agent or the unintentional residual adhesion of a pesticide is interesting a wide variety of persons. The Division of Food, Drug and Cosmetic Law of the American Bar Association will discuss the matter at a meeting in September. It has been discussed by the Industry Advisory Committee of the Nutrition Foundation. The executive secretary of the Food Protection Committee of the National Research Council has published a commentary; so has the Council on Foods and Nutrition of the American Medical Association.

This subject deserves at least as much consideration as was given in the early years of the original food and drug law to the use of preservatives in food. There should be a determination of whether the Food Protection Committee of the National Research Council is as qualified to pass on the use of chemical food improvers as was the Remsen board on the use of sodium benzoate as a preservative. Some similar arbiter should be set up.

There are several reasons to feel that the matter of intentional addition of chemicals to food should be dealt with statutorily apart from the unintentional contamination of foods with pesticidal residues. The latter logically belongs with the insecticide, fungicide, and rodenticide act, rather than with the food, drug, and cosmetic act which would encompass the former. The decision in neither case should be left to the administrative agency which would, naturally, seek a goodly margin of safety against repercussions arising from inadequacy of the control. The determinations should be made by an independent, impartial body set up through full, whole-hearted cooperation of all interests concerned.

(Foregoing articles first appeared as an editorial in the "Oil, Paint and Drug Reporter" and is reprinted with permission.)

When inquiring check FP 2410 on handy form, pgs. 2-3

Lifting injuries most frequent of all industrial accidents . . .

elimination of hazardous manual handling reduces hernia, back injuries

Manual handling of loads is responsible for one of industry's most serious occupational hazards. Figures compiled from state labor department records indicate the extent and costs of these liabilities. Illinois in 1948 paid out almost a million dollars in compensation to workers suffering hernia and back injuries. Such accidents account for more than 15% of the grand total of all injuries in heavily industrialized states and approximately 10% of the total in others.

Proper instruction of those handling heavy material helps to reduce lifting accidents. On production work, in which a man encounters only four or five kinds of objects, specific regulations can be set up to control any manual handling of loads that are too heavy for such methods. Educational programs, however, have definite limitations. Installation of conveyors and tramrails, the use of fork trucks and other material handling equipment offers the real solution to this problem.

An indication of how dominantly lifting injuries lead all other types of accidents is shown in percentage figures for one large highly industrialized state. Handling accidents account for 27.2% of total cases, machinery with 18.3% is next, followed by falls which are responsible for 17.2%.

The full benefit of material handling equipment in reducing accidents, and otherwise contributing to efficiency, is realized through proper operation. This is illustrated in a number of rules that have been compiled to guide those operating power industrial trucks. Some of the most important ones are presented here.

One of the most important precautions is keeping the load as low as possible when moving. There is less danger of tipping a load carried at low level. Keep it low enough so that you can see over it. Another is keeping truck behind load. If operator should get off suddenly, or fall off, then load will be moving away from him. When going up steep inclines, it is sometimes better to reverse this position.

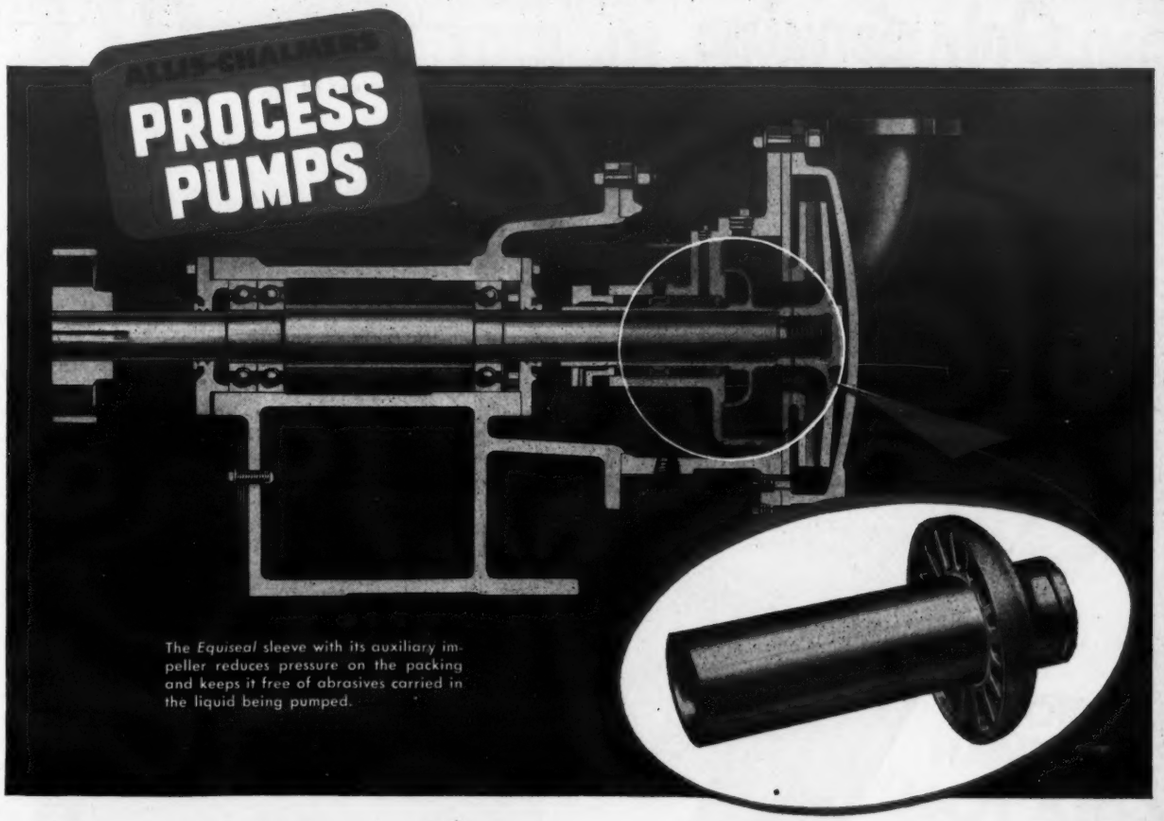
Other precautions that should not be neglected are avoiding making quick and jerky stops, and using tilting devices wherever they are incorporated in the truck. Also, being sure to pick up each load squarely. Finally, never haul hazardous liquids or acids except in approved containers and don't drive in the dark.

(Summarized from reprint, issued by The Elwell-Parker Electric Company, Dept. FP, Cleveland, Ohio, of article "The High Cost of Lifting" as originally published in Occupational Hazards.)

Roofing problems considered in illustrated brochure

Authoritative discussion of roofing problems is contained in 32-page brochure. Illustrated by photographs, drawings, and diagrams, brochure explores such subjects as various types of roofs, how they are built, what factors enter into their deterioration, and how roof troubles can be diagnosed and treated. Information was obtained from lab reports and actual field experience.

Brochure is divided into 15 sections, with contents tabulated. Typical headings — "Laying the Built-Up Roof", "Repair of Copings and Parapets", "Area Treatment of Roofs". "Solving Roof Problems" is issued by The Tremco Manufacturing Company, Dept. FP, 8701 Kinsman Rd., Cleveland, O. When inquiring specify FP 2411 on handy form, pages 2 and 3.



The *Equiseal* sleeve with its auxiliary impeller reduces pressure on the packing and keeps it free of abrasives carried in the liquid being pumped.

How To Keep Abrasives Out of the Stuffing Box

YOU CAN ELIMINATE abrasives-in-the-stuffing-box problems with an Allis-Chalmers Process Pump equipped with *Equiseal* stuffing box. This stuffing box arrangement consists of an auxiliary impeller like the one shown which produces a low pressure area in front of the packing. On all suction lifts and on suction heads up to fifteen feet, this pressure is zero. *None of the liquid being pumped enters the stuffing box.* None of the abrasive carried by the liquid enters the stuffing box.

NO LEAKAGE

The *Equiseal* stuffing box is so efficient that no leakage whatever occurs with suction head as high as fifteen feet. Where the suction head is more than fifteen feet, the head at the packing is reduced by that amount. Penetration of the packing by abrasive bearing liquid is reduced. Sleeves and packing last much longer.

The *Equiseal* stuffing box can be added to your present Allis-Chalmers Process Pumps.

If you pump corrosives or abrasives, you should know about the Allis-Chalmers Process Pump with *Equiseal* stuffing box. Ask your Allis-Chalmers Authorized Dealer or District Office, or write Allis-Chalmers, Milwaukee 1, Wisconsin. Ask for Bulletin 08B6615.

A-3474

Equiseal, Texrope and Vari-Pitch are Allis-Chalmers trademarks.

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Sold . . .
Applied . . .
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by Allis-Chalmers Authorized Dealers, Certified Service Shops and Sales Offices throughout the country.

MOTORS — ½ to 25,000 hp and up. All types.

CONTROL — Manual, magnetic and combination starters; push button stations and components for complete control systems.

***TEXROPE* — Belts in all sizes and sections, standard and *Vari-Pitch* sheaves, speed changers.**

When inquiring check FP 2412 on handy form, pgs. 2-3

Only genuine RIDGID Guarantees economy

If this Housing ever Breaks or Distorts we will replace it Free.
RIDGID
HEAVY DUTY
14
This Work-Saver RIDGID assures you . . . "No pipe wrench housing repair expense."

● You'll find no substitute for the smart-working, long-lasting qualities that have made RIDGID the world's most popular pipe wrench. Breakproof housing, full-floating hookjaw with handy pipe scale, replaceable heeljaw, adjusting nut that spins easily in all sizes, 6" to 60", comfort-grip handle—these plus the RIDGID name mean more service and tool satisfaction for your money. Buy at your Supply House.

RIDGID
★ Work-Saver Pipe Tools ★

When inquiring check FP 2413 on handy form, pgs. 2-3

Directional dirt-fall collector to locate the sources of air pollution . . .

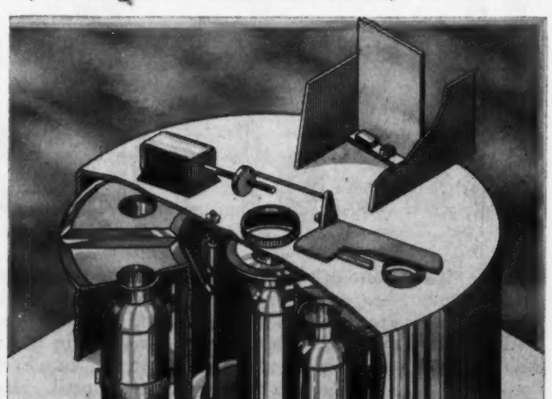
knowing the direction from which large quantities of dirt come gives index of location of offenders

A new instrument for use in analyzing air pollution problems in highly industrialized areas has been developed by Battelle Institute. Because it will tell the direction from which large quantities of dirt come, it is expected to become useful to industries and municipalities in locating the sources of air pollution nuisance.

Known as a "directional dirt-fall collector", the instrument will provide an index of the general location of plants which may be responsible for heavy dirt fall. It is designed to collect heavy dirt from any direction the wind is blowing. For a reliable indication of the sources of heavy contamination, the instrument must be exposed for 30-day collection periods over many months in a carefully chosen location representative of a given area. The amounts of collected material must be correlated with data obtained from the Weather Bureau. A so-called 'wind-rose pattern' shows the number of hours the wind has blown from the eight points of the compass. Knowing this, it is then possible to determine the relative amounts of dirt which have fallen per hour into the instrument from various directions.

For a complete dirt-fall collection program, several directional dirt-fall collectors are required. Simultaneously, fine particles (aerosols) and gas and odor concentrations in the air, along with weather conditions, may be analyzed using other appropriate instruments and equipment.

The instrument (see illustration) consists of a series of 8 jars arranged in a circle with a ninth jar in the center.



Directional dirt-fall collector

These jars have metal funnels which will collect dirt not falling directly into the jar mouth. At the end of the collection period, the dirt may be brushed into the appropriate jar.

Jars are covered with a canopy which has one hole at the outside edge and another at the center. When the wind is blowing at a velocity greater than 3 mph, the outer hole is covered and the wind vane turns the canopy in such a manner that the dirt is collected in the jar corresponding

Jam-packed with cost-cutting, efficiency-boosting characteristics, the Johnson Joint offers exciting possibilities you should know about. It's a packless, self-lubricating and self-adjusting way to get heating or cooling agents in or out of rotating machine parts; used on calenders, dryers, ironers, mills and similar machines. There are hundreds of design and production problems for which it holds the perfect answer.

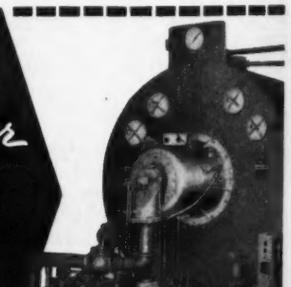
Write for complete literature

The Johnson Corporation

834 Wood St., Three Rivers, Mich.

When inquiring check FP 2414 on handy form, pgs. 2-3

ONLY THE *Powermaster* GIVES YOU ALL 3 ADVANTAGES



1. Wide range between high and low fire—you use less fuel. **2.** Freedom from carbon cuts clean-up time and expense—usually by 50%. **3.** Change from oil to gas (or gas to oil) in a few minutes.

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Please send my free copy of the POWERMASTER catalog.

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When inquiring check FP 2415 on handy form, pgs. 2-3

to one of the wind directions on the eight points of the compass. When the wind falls below 3 mph, the auxiliary wind vane (perpendicular to the directional wind vanes) moves to a vertical position closing an electrical contact which operates the motor to move the cover closing the outer hole.

In this same operation, the inner hole is uncovered and all of the dirt falling during this period of calm is collected in the central jar. When the wind velocity exceeds 3 mph, the auxiliary wind vane is blown from a vertical position and an electrical contact moves the cover to close the center hole and uncover the outer hole.

(The directional dirt-fall collector will be made commercially available by Eberbach & Son Company, Ann Arbor, Mich. Information received from Battelle Memorial Institute, Dept. FP, Columbus 1, Ohio.)

Rejuvenates glass-lined tanks with stainless steel liner . . .

cost of service is 50 to 65% the cost of new tank

"Worn-out" glass-lined tanks are being salvaged at 50 to 65% of the cost of a new tank by a unique service offered to industry. Company offering the service picks up old tank, fabricates and fits in a No. 14 or 12 gauge polished stainless steel liner, tests the liner, replaces insulation if any, and returns to customer. In the case of closed vessels, such as milk holding tanks, one head is removed during repair and is then replaced.

During the process, openings can be changed, and holes and agitators modernized where such is desired. Finished tank is said to be equal in quality to a new tank.

(Service provided by Walker Welding & Machine Company, Dept. FP, New Lisbon, Wis. . . . or for more information check FP 2416 on handy form, pages 2 and 3.)

2 or 3 times the pipe footage/lb obtained with schedule 5 stainless steel pipe . . .

at Knouse Foods Cooperative, Inc., schedule 5 pipe was incorporated into their present system easily

More emphasis is being placed on the use of light-walled schedule 5 stainless steel pipe because of material shortages. In comparison with the heavier schedule 40, this pipe provides 2 or 3 times the pipe footage per pound of stainless steel and thus effects savings in cost per foot. In addition, the adaption of the pipe to present installations is easily accomplished. At Knouse Food Cooperative, Inc., Peach Glen, Pa., for example, schedule 5 pipe was put into use with their existing system without special arrangements, since this pipe has standard size outside diameters.

Because of the high tensile strength of stainless steel, the thin-walled pipe handles process pressures with an adequate margin of safety. It offers full corrosion resistance in every respect. A comparison of the wall thicknesses of the various schedules shows that schedule 5 gives a larger inside diameter, and thus a greater internal cross-sectional area. Consequent improvement in flow conditions is effected.

(A set of data sheets with comparative specifications on schedules 5, 10 and 40 is available from The Carpenter Steel Co., Alloy Tube Div., Dept. FP, Union, N. J. . . . or for more information check FP 2417 on handy form, pages 2 and 3.)

AIR. BASIC TOOL IN FOOD PROCESSING

YOU CAN DEPEND ON "Buffalo" FANS FOR AIR PERFORMANCE!

From simple ventilation to air circulation for quick freezing, air is a valuable tool in every type of food plant! And you'll find "Buffalo" Fans doing these many jobs to complete satisfaction. Here are two examples of "Buffalo" Fans that help make better food—

FOR HANDLING HOT GAS!

(or material conveying)

Above is a well-known "work" fan, the "Buffalo" Industrial Exhauster. This model is equipped with a heat slinger (a small rotor mounted on shaft nearest housing) and is capable of handling gases up to 720 deg. F. Of all-welded rugged steel plate construction, it is effective in a wide variety of exhausting applications — and may be had with interchangeable Material Wheels or Air Wheels.

WRITE FOR BULLETIN 3576-B

FOR THE LARGE VENTILATION AND AIR CONDITIONING JOBS!

At left is a "Buffalo" Limit-Load Fan, famous for its quietness, efficiency and non-overloading characteristic. Processing and packing plants put the "LL" to many profitable uses. *Write us for the facts* — this fan is made in sizes up to 500,000 cfm, to meet most requirements.

"Buffalo" FIRST FOR FANS

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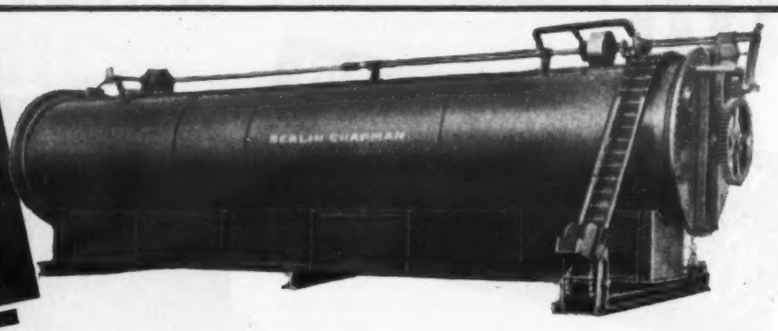
VENTILATING FORCED DRAFT | AIR WASHING COOLING | AIR TEMPERING HEATING | INDUCED DRAFT EXHAUSTING PRESSURE BLOWING

When inquiring check FP 2418 on handy form, pgs. 2-3

for EXTRA LARGE VOLUME and HIGH SPEED LINES . .

BERLIN CHAPMAN SUPER CONTINUOUS COOKER



HERE is a large capacity high speed cooker and cooler designed primarily for use in plants that have an extra large volume and that run their production lines at high speed. Berlin Chapman Super Continuous Cooker will handle 200 cans per minute without jamming or denting the cans. Recommended for one size can only. Because of the "Reverse Agitation" the time of the can in the cooker is reduced to a minimum. Consult our Engineering Department for recommendations for the type best suited to your purpose . . . cookers for can sizes number 1, 2, 2½, 3 (4⅞) 3 (5¼) and number 10 cans. Capacities from 1000 for the smaller size can to 500 for the number 10 cans.

Berlin Chapman Super-Continuous Cooker and Cooler is adapted for cooking and cooling all fruits and juices, and is especially recommended for cooling malt syrup. Complete details upon request. Also ask about the various types of retorts . . . Berlin Chapman All-Steel Retorts, Horizontal Retorts, and Cast Lid Retorts—made in sizes to meet your requirements.

WRITE FOR COMPLETE CATALOG ON FOOD PROCESSING MACHINERY

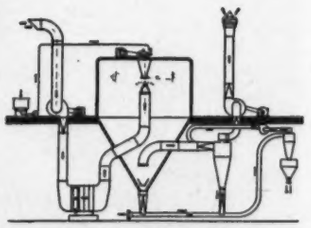
BERLIN CHAPMAN CO. BERLIN, WIS.

When inquiring check FP 2419 on handy form, pgs. 2-3

NERCO-NIRO *The Engineered* Spray Dryer

Over 200 installations in 25 countries

Milk and Milk Products including cream, ice cream, baby foods, whey, casein, cheese, etc.
Malt Extract, Glucose and Yeast.
Eggs; whole egg, yolk and white.
Flour, Starch and Gluten.
Soy Bean Flour and products derived therefrom.
Coffee, Tea and Maté.
Vegetables, Fruit Pulp and Pectine and others.



Typical Nerco-Niro Spray Dryer flow diagram.

The Nerco-Niro Spray Dryer offers numerous advantages developed during more than 20 years of extensive research.

OUTSTANDING FEATURES:

100% soluble powder with extraordinary good keeping quality and unsurpassed uniformity.
Ease of cleaning and operation.
Low production and maintenance cost.
Reliable performance and non-clogging atomizer.
Complete recovery of solids without use of filters or wet scrubbers.

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NERCO NIRO

At Left: **Low Temperature Spray Dryer—2,200 lbs/hr whole milk powder**

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NERCO-NIRO SPRAY DRYER DIVISION
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PACIFIC COAST OFFICE
40 S. Los Robles Avenue
Pasadena 1, Calif.

When inquiring check FP 2420 on handy form, pgs. 2-3

Water needs of industry increasing; conservation more necessary . . .

use of cooling towers and exchangers is becoming more important in "thrift" program

In the major industries, *increases* in total water requirements are estimated for the ten year period ending in 1949 as follows:

Aircraft and Auto	82%
Medical Supplies	73%
Petroleum	58%
Machinery & Tools	52%
Electric Power Generation	51%
Chemical and Drugs	45%
Iron & Steel	45%
Foods	38%

Statistics from the December 1950 publication of the Economic Policy Division of the National Association of Manufacturers covering basic industrial requirements on water use per unit of product are excerpted as follows:

COMMODITY	UNIT	AVERAGE WATER REQUIREMENT IN U. S. GALLONS
Milk	1 gal	5
Beer	1 gal	15
Standard Gasoline	1 bbl	10
Refined Gasoline	1 bbl	420
Aviation Gasoline	1 bbl	1000
Synthetic Gasoline	1 bbl	15,834
Corn on the Cob	1 ton	1000
Corn Syrup	1 bbl	3180
Soap	1 ton	4493
Ice	1 ton	5000
Steel	1 ton	65,000

Because conservation of water is becoming of more importance, the forward looking engineer plans his plant around the use of spray ponds, evaporative coolers, atmospheric deck-type cooling towers, forced draft cooling towers or the more popular mechanical design known as the induced draft cooling tower. Each device utilizes the physical phenomena of latent heat in its function. For each pound of water evaporated within the equipment, approximately 1000 Btu of waste heat is ultimately dissipated into the atmosphere.

For the plant operator to obtain preliminary structural, mechanical and electrical data for a cooling tower to handle a certain condensing requirement, simple specification of heat load, desired water rate and temperatures, and ambient air wet bulb temperature will enable the cooling tower manufacturer to prepare basic design data. Consideration should be given to tower proportions of length, width and height.

Prevailing and next-prevailing wind direction may influence tower location with respect to plant and equipment position when the effect of downwind saturation is evaluated. Winter icing of the air intakes deserves detailed study in the same consideration with ice formation due to condensate precipitation to the lee of the structure.

Accessory equipment

It is essential that partial load operation be considered in the selection of cell arrangement, fan diameters, fan drives and water circulating pumps. The use of two-speed motors for fan drives permits appreciable reduction in power demand during off-peak periods.

Flow control on water circulating pumps deserves particular attention when we consider that the volume delivery of the centrifugal pump varies as the speed, the horsepower varies as the cube, and the head varies as the square of the

speed. Thus, a power saving of only 45% at half speed operation is realized.

In the small plant, water cooling can be efficiently handled by "closed" systems utilizing atmospheric or shell and tube heat exchangers in conjunction with raw water circulation over spray ponds or spray towers if space is available and driftage is not objectionable. In the larger units, the waste heat may be dissipated efficiently by an induced draft cooling tower.

In locations of high water cost or unavailability of dependable water supply, the recently developed air-cooled heat exchangers fulfill the requirement. Utilizing the mechanical equipment developed for cooling towers, the air-cooled devices are designed to force or induce a flow of ambient air over the extended tube surface developed by "fins" wrapped around or drawn out of a heavy wall tube through which the circulating water is pumped. Efficient designs of finned tubing often deliver 2.5 times the capacity of plain tube surface per square foot of effective external area.

Without the advantage of latent heat phenomena utilized in cooling tower function, the air-cooled exchangers, dependent upon dry bulb temperatures of the ambient air, compare favorably in total annual charges to the cooling tower installations on internal combustion engine-driven generators. With 100°F dry bulb air passing through the finned tubing, 140°F water temperature can be achieved efficiently. Obviously, the economy of the air-cooled designs is lost when the temperature requirements fall close to or below the ambient dry bulb temperature.

(Summarized from paper presented by Mr. Raymond C. Kelly, J. F. Pritchard & Company, before the annual Midwest Power Conference, sponsored by the Illinois Institute of Technology, April 4, 1951.)

New calibration method for testing sieves cited by NBS . . .

expected to reduce discrepancies in sieve analyses made at different labs with varied sieving apparatus

A simple, rapid procedure for determination of the effective opening size of testing sieves has been developed by NBS. The method, which employs calibrated glass spheres of graduated size, may be readily applied by anyone familiar with sieving procedures, without the need of special apparatus. Use of this technique is expected to reduce markedly the discrepancies which now occur between sieve analyses made at different labs with different equipment.

Evaluation of the effective opening of a sieve with glass spheres is easily accomplished by sieving a calibrated sample of the spheres in exactly the same manner as employed for usual sieve analysis. The sample contains a continuous distribution of sphere sizes. The weight percentage passing the sieve is evaluated, and the effective opening of the sieve can then be read directly from calibration curve supplied with the sample. Once the effective size of each of a set of sieves is known, all sieve analyses made with the set can be corrected by a simple graphical process to give the same values as a set of standard sieves. The sugar industry is among those that should be benefited.

(A limited number of the calibrated glass sphere mixtures are available from J. M. Brown, Secretary, Bone Char Research Project, Inc., c/o Revere Sugar Refinery, 333 Medford St., Charlestown 29, Mass. Purchasers are requested to report their experience in the use of these spheres to Dr. V. R. Deitz, National Bureau of Standards.)

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U.S. MOTORS

are asbestos-protected

No motor is more durable than its windings. In *U. S. Uniclosed Motors* all windings are *asbestos-protected*. Motor life is tremendously increased because asbestos cannot carbonize and withstands highest temperatures.

Uniclosed Design

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or Milford, Conn.

Send U. S. Uniclosed Motor Bulletin featuring asbestos-protected windings.

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When inquiring check FP 2421 on handy form, pgs. 2-3

How to Shock-proof 300 feet of Conveyor

★ Three-hundred feet of conveyor—and an intermittent loading of from 50 to 250 full bottle cases, made maintenance, downtime, and repair costs soar in the plant of a Milwaukee bottler.

Since two electric motors fought against each other, a Twin Disc HYDRO-SHEAVE Drive was installed at each power station—installed in a few minutes directly onto the motor shaft, in the normal sheave position.

Ever since, each motor and gear reducer takes its share of an unbalanced load without shock—for all shock is absorbed by the HYDRO-SHEAVES. Motors no longer pull against each other. The HYDRO-SHEAVES, by transmitting the power through fluid, permit a *soft, balanced* drive in which motors can pick up a full load cleanly, without jerking or stalling to eliminate entirely many of the reasons for costly operation.

Two electric motors are balanced, shock loads are cushioned out in the plant of a Milwaukee bottler with Twin Disc HYDRO-SHEAVE Drives.

Wherever you have a shock load, an unbalanced load, or an intermittent load, you can save dollars and smooth out the cycle with HYDRO-SHEAVE Drives—manufactured only by Twin Disc. Write today for Bulletin No. 145-B or a complete file of Installation Reports.

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CLUTCHES AND HYDRAULIC DRIVES

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford, Illinois

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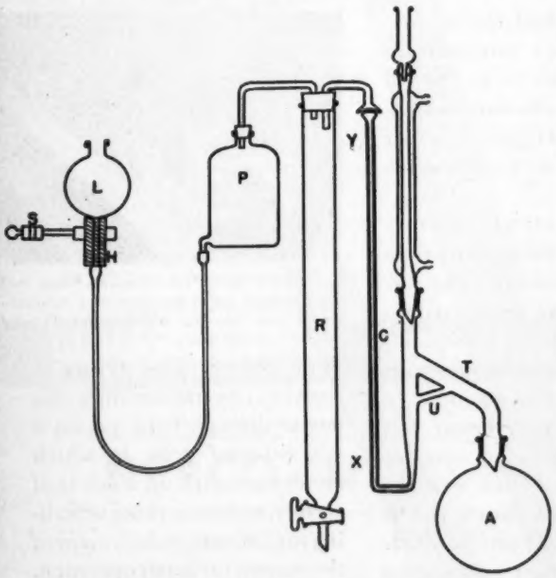
When inquiring check FP 2422 on handy form, pgs. 2-3

Develops improved apparatus for determining water in organic materials . . .

rapid and simple, is applicable to oils, dried foods

National Bureau of Standards announces an improved apparatus for precise determination of moisture in rubber that promises to provide a rapid and simple means for accurate water determination in oils, dried foods, and other organic materials.

Apparatus uses the method which involves the formation of a minimum-boiling azeotrope (constant-boiling mixture) of an immiscible organic liquid with the water present in the material, distillation of the azeotrope,



NBS apparatus for moisture determination in rubber and other organic materials:

A — Distillation Flask	C — Calibrated Capillary Tube
T — Trap	
U — Overflow Tube	P — Water Bottle
L — Leveling Bulb	S — Clamp
	H — Threaded Tube

and separation of the water as a separate phase for volumetric determination. Decomposition of the sample is prevented by the relatively low temperature at which the distillation takes place.

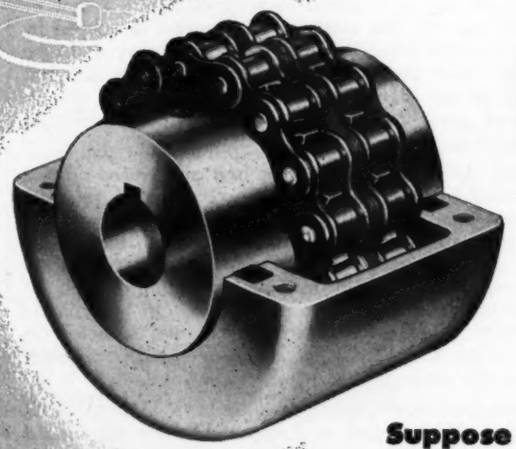
Problems encountered with other devices of this type are not met here. These have usually included difficulty in reading accurately the volume of water collected and poor separation of the water from the organic liquid.

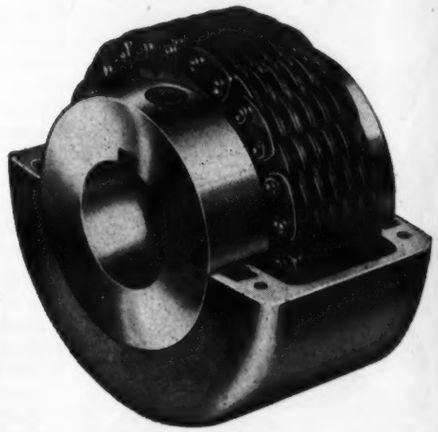
NBS apparatus consists essentially of a distillation flask in which the sample is heated, a reflux condenser with a drip tip, a trap for collecting the water which separates out in the condenser, a capillary tube for measuring the distilled water, and a waste receiver with a drain stopcock at the bottom. The waste receiver is connected to a bottle of water, which in turn is connected by rubber tubing to a leveling bulb.

Results obtained with the apparatus on samples containing about 1% water have been of the same order of accuracy as those obtained with the Karl Fischer technique. The method has been evaluated in several experiments, designed for statistical analysis, in which the

Wherever You are...

UNION CHAIN IS NEAR BY





Suppose you need UNION Roller Chain or Silent Chain Flexible Couplings . . .

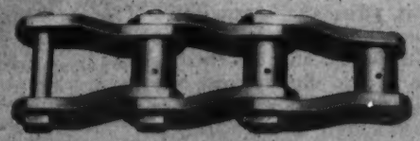
. . . for replacement or for a familiar application. Just phone or write to your nearest Union Chain Stock Carrying Distributor listed on the facing page, and he will make it his business to see that you get the earliest possible delivery.

. . . or *suppose you need* engineering advice on the proper use of flexible couplings for the joining of two shafts of the same or different diameters in such a way as to allow lateral movement of either shaft and compensate for a slight misalignment of the shafts. Then you should get in touch with the nearest Union Chain district representative as listed on the facing page.

You will receive competent, experienced counsel, since Union Chain manufactures all types of steel drive chains and is thoroughly accustomed to solving power transmission problems for its customers. We will welcome your inquiry.

UNION ROLLER CHAIN

UNION SILENT CHAIN



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Syracuse, New York

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F. Smiley
Marshall Bldg.
Cleveland 13, Ohio

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Portland 14, Oregon

PENNSYLVANIA
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P. O. Box 4
Plymouth, Pennsylvania

Wayne Ritter
3031 W. Liberty Ave.
Pittsburgh 16, Pennsylvania

Union Chain & Mfg. Co.
John A. Shoemaker
Room 521
Schaff Bldg.
Philadelphia 2, Pennsylvania

TEXAS
Union Chain & Mfg. Co.
J. H. Castleberry
E. T. Teal
205 Irwin-Keasler Bldg.
Dallas 1, Texas

VIRGINIA
C. Arthur Weaver Co.
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Richmond 19, Virginia

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606 W. Wisconsin Ave.
Milwaukee 2, Wisconsin

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E. F. Gehan
500 Fifth Ave.
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Muneces 110
Casilla Correos 10
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Central Machine & Trading Co., S.A.
Lamparilla 208
Havana, Cuba

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6a Avenida Sur No. 30
Guatemala, Guatemala

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P. O. Box 1441
Honolulu, T. Hawaii

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Thomas M. Nevin y Cia. S.A.
Av. Insurgentes 2240
Mexico 6, D. F., Mexico

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P. O. Box 612
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Edificio Maritimo
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San Juan 13, Puerto Rico

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Dothan, Alabama

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ARKANSAS
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P.O. Box 145, University Station
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San Francisco 3, California

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Bridgeport 3, Connecticut

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Standard Industrial Supply Co.
403 Adams St.
Wilmington, Delaware

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Ellis & Lowe Co., Inc.
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Tampa, Florida

Farquhar Machy. Co.
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P.O. Box 1470
Miami, Florida

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Macon, Georgia

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Macon, Georgia

Phillips Hardware & Supply Co.
1022 Front Ave.
Columbus, Georgia

Richmond Supply Co.
Augusta, Georgia

John D. Robinson Co.
13 Bay Street, West
Savannah, Georgia

GEORGIA
J. M. Tull Metal & Supply Co.
285 Marietta St. N. W.
Atlanta 3, Georgia

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Boise, Idaho
Western Bearings, Inc.
156 South Third St.
Pocatello, Idaho

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Hagerty Bros. Co.
923 S. Washington St.
Peoria 2, Illinois

W. M. Hales
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W. M. Hales Co.
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2401 Eleventh St.
Rockford, Illinois

Northern Illinois Supply Co.
Carpentersville, Illinois

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Evansville, Indiana

Sherer Electric Co.
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Indianapolis 25, Indiana

The South Bend Supply Co.
South Bend, Indiana

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Bearing Service Co.
341 N. St. Francis Ave.
Wichita 2, Kansas

W. A. Thomas Supply Co.
112-114 West Third St.
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Sherman Bros. Mill Supply
222 South Shi:iby St.
Louisville 2, Kentucky

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Behring's Bearing Service, Inc.
Lake Carles, Louisiana

Dixie Bearing & Supply Co., Inc.
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Baton Rouge, Louisiana

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Monroe, Louisiana

Woodward Wight & Co., Ltd.
New Orleans, Louisiana

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Hagerstown Equipment Co.
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Hagerstown, Maryland

M. P. Holland Co.
Lee & Sharp Sts.
Baltimore, Maryland

MASSACHUSETTS
Bellamy-Robie, Inc.
45 Main St.
Cambridge, Massachusetts

Babcock Equipment Co.
163 Highland Ave.
Needham Heights 94, Mass.

MICHIGAN
Abrasive Supply Co.
821 W. Milwaukee Ave.
Detroit, Michigan

MINNESOTA
Iron Range Equipment Co.
490 N. Snelling Ave.
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519 Cleveland Ave.
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Industrial Equipment Corp.
325 E. Walnut St.
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Union Industrial Corporation
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S. H. Pooley Belting Co.
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Lima Armature Works, Inc.
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Lima, Ohio

Mill & Factory Supply Co.
317–10th St.
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1100 Warner Road, S. E.
Canton, Ohio

Winkle Electric Co., Inc.
701 Andrews Avenue
Youngstown 2, Ohio

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C. P. Dagwell & Company
816 W. Main St.
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Electric Steel Foundry
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801 N. Logan Blvd.
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44 N. Queen St.
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Tipps Engineering & Supply Co., Inc.
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Beeson Supply Co., Inc.
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Houston 10, Texas

Bearing Specialists Co.
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El Paso Machine Works, Inc.
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El Paso, Texas

Great Western Supply Co.
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Fort Worth, Texas

Lloyd Electric Co.
311 El Paso St.
San Antonio, Texas

Overton & Mims, Inc.
1307 Indiana
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VIRGINIA
Blue Ridge Hardware & Supply Co.
Bassett, Virginia

Mill Supplies Corp.
South Norfolk, Virginia

WASHINGTON
Electric Steel Foundry
1327 Washington St.
Spokane, Washington

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Fork Engineering Sales Co.
2391 Dudley St.
Parkersburg, W. Virginia

Bluefield Hardware Co.
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TRANSMITTING POWER
UNION CHAINS
CONVEY MATERIALS

When inquiring check FP 2423 on handy form, pgs. 2-3

IDEAS

effects of a number of possible variables were studied. Findings show that when the procedure is applied to rubber there is a standard deviation of 0.023%. For accurate work, allowance must be made for incomplete recovery of all the water in the sample. In the case of rubber, recovery is about 96%.

(Information received from National Bureau of Standards, U.S. Department of Commerce, Washington 25, D.C.)

Pipe size limits trap capacity . . .

no practical value to making trap orifices as large as pipe diameter

Some years ago there was a demand for a trap with a discharge valve equal in diameter to the pipeline itself. To some, the answer to this demand might be immediately obvious. Armstrong Machine Works, however, thought it would be interesting to work it out. Calculations showed why there is no point in such a trap, and that it is a waste of money.

Consider a 2½" pipe with a 2½" trap valve. Here, the pipe size limits the trap capacity. In other words, while a trap might pass 216 cfm, the pipe itself will only pass 102 cfm, for example.

Consider next a 3" pipe with a 2" trap valve. Here, the trap limits the capacity of this combination. In practice, by enlarging the pipe size, the pressure drop due to friction in the pipe is cut down. This condition has the effect of raising the pressure at the trap and thereby increasing the trap capacity.

Moral to the story — rather than build the trap orifice up to pipe size, simply enlarge the pipe size.

(Summary of information from "Armstrong Trap Magazine", No. 3, 1951, Armstrong Machine Works, Dept. FP, Three Rivers, Mich.)

Applicability of plastic pipe shown in wine industry by immersion tests . . .

product has already proved suitable for handling tomato pulp, citrus juices and other food products

Lengths of flexible and rigid types of plastic pipe were immersed in various standard wines for 37 days at Italian Swiss Colony. In the case of flexible pipe, there was no change of taste, color or clarity in the exposed wines. Dry wines exposed to the rigid pipe showed no change in taste, while the sweet wines exhibited a barely detectable difference.

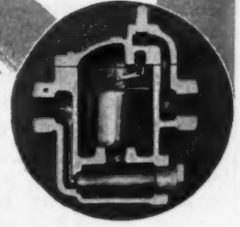
The possibility of flavor loss by osmosis of volatile aromas and flavors in the wine was found negligible.

Test procedure also included a study of effects on brandy and wine vinegar. With the former, plastic pipe samples were placed in straight brandy in an incubator at 114°F for one week. Brandy containing flexible piping was unchanged while that exposed to the rigid type developed a foreign taste and aroma. Incubation was also carried out in tests on wine vinegar. Results were comparable to those obtained with the brandy excepting that rigid pipe had only a negligible effect on the characteristics of the wine.

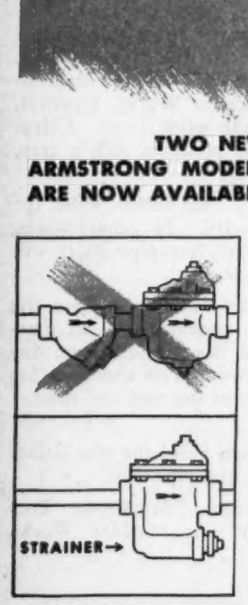
(Information received from Carlon Products Corp., Dept. FP, 10225 Meech Ave., Cleveland 5, Ohio.)

NEW

STEAM TRAPS WITH BUILT-IN STRAINERS SAVE YOU MONEY



TWO NEW ARMSTRONG MODELS ARE NOW AVAILABLE



NO longer need you install a strainer ahead of steam traps draining smaller sized equipment—urns, kettles, steamers, cookers, etc.—nor take a chance on unprotected traps clogging when dirt and scale conditions are bad.

New Armstrong Trap Model No. 880 for the smallest equipment, or No. 881 for slightly larger drainage requirements have the strainer built right in the trap body. A separate strainer, extra fittings and considerable installation labor is thereby eliminated. Look over your small trap applications and order the traps you need now from your local Armstrong Representative's stock.

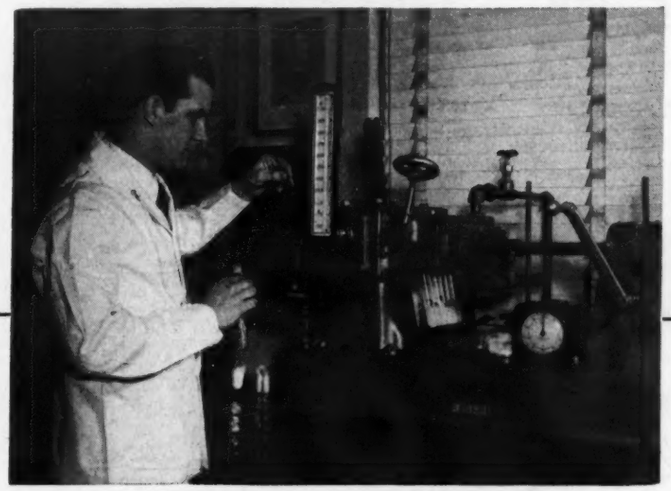
ARMSTRONG MACHINE WORKS
881 Maple Street, Three Rivers, Mich.

SEND FOR THE STEAM TRAP BOOK

Learn Why Armstrongs Save Fuel, Get Equipment Hotter, Faster, Save Labor and Time.

When inquiring check FP 2424 on handy form, pgs. 2-3

Quickly Determine Heat Treatment Required to Sterilize Foods



Enables packers to accurately reduce processing time to minimum, improves product flavor and color

Food technologist operating the new Thermoresistometer, which determines the degrees of heat necessary for food sterilization

TO control food spoilage bacteria and molds, retort time and temperature must be carefully controlled. In the past this has been by heating an inoculated pack of food in small cans or tubes. Because heat penetration is slow, lag times interfere with proper interpretation. Results could never be correlated when commercial flash sterilization practices were used.

This difficulty has been overcome by using small inoculated samples, exposing sample directly to steam as heating medium, and using entire sample for determining bacteria. Exposure length is controlled to fraction of second by placing in "thermoresistometer". Heating medium containing the spores to process temperature, then cooling to temperature having little lethal value are accomplished so rapidly in new unit that errors due to temperature lag are virtually eliminated.

Operation is comparatively simple. Food container does not have to be hermetically sealed. Subculturing is eliminated because as each open container of sample is removed from the thermoresistometer it falls directly into a tube of culture media. Other advantages are: entire sample is cultured and chances for contaminating the processed sample or culture medium are greatly reduced. One technician after a week of training can, in an eight hour day, handle 216 samples, provided the spore suspension and culture medium are available. This number allows for six replicate samples to be subjected to each of six time-temperature relationships for each of six temperatures employed. During eight hours, one technician can prepare 216 inoculated food samples, process them, layer each culture with sterile agar or other sealing material, and place all cultures in the incubator. Previous methods have required four times as long to secure the thermal resistance data.

The new unit's reliability is important when a product is heated to 270°F. Present Thermal Death Time methods are not adaptable to bacteria resistant to temperatures above 240°F.

The thermoresistometer furnishes the commercial packer a more accurate knowledge of the minimum heat treatment necessary for sterilization, permits reduction in processing times and the testing of flash sterilization procedures while the product is flowing. This reduction helps to preserve vitamin content, and food flavor and color.

(Thermoresistometer is a development of Food Machinery and Chemical Corp., Dept. FP, San Jose 5, Calif. ... or for more information check FP 2425 on handy form, pages 2 and 3.

Adjustable zero suppression and range facilitate the recording of test data . . .

electronic strip chart recorder permits selection of scale at will and ignoring useless parts of range

Uses: For measuring and recording applications where only a small part of the range shows any significant changes. By adjusting zero and range of recorder this narrower band of significant values is amplified. For example, zero can be adjusted for tare weight and suitable scale calibration selected, or small temperature changes can be shown in an elevated temperature process.

Features: Has a range continuously adjustable over a 20:1 ratio, permitting the user to select his own scale calibration at will. Zero suppression adjustable over more than twice the maximum range allows the operator

to ignore that portion of the range in which he is not interested, while he spreads the few millivolts he wants to watch across the entire width of the instrument chart.

Description: "Speedomax" is an electronic strip-chart type recorder. DC millivoltage range is adjustable from a minimum across-chart span of 1.1 mv to a maximum range span of 22 mv. Uncalibrated coarse and fine rheostats provide maximum zero suppression of minus 50 or plus 50 mv, continuously adjustable between these limits. These adjustments are independent. Range remains constant during zero adjustment; zero suppression remains constant during adjustment.

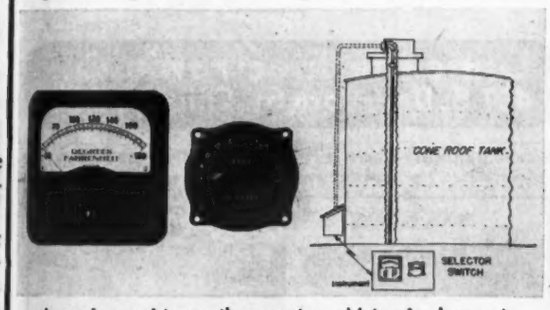
Source: Leeds & Northrup Co., Dept. FP, 4934 Stenton Ave., Philadelphia 44, Pa., is the maker. . . or for more information check FP 2426 on handy form, pages 2 and 3.

Determines average temperature of liquid stored in tanks . . .

averaging resistance thermometer gives readings correct within ½°F in a few seconds

Uses: For ascertaining the average temperature of stored oils and other fluids in tanks when accurate determination of contents is required.

Features: Average temperature readings are accurate to within ½°F regardless of the product, product level, temperature gradient of the product in the tank, or



Averaging resistance thermometer. Meter is shown at left, selector switch center, and resistance bulb assembly installed in storage tank at right

weather conditions. Readings can be obtained in a few seconds as compared with 2 hours sometimes required in accurate temperature measurement of large tanks with use of cup thermometers.

Description: Model 918 averaging resistance thermometer consists of a flexible resistance bulb assembly, a meter, and an oil level selector. Meter and selector are enclosed in a housing, while bulb assembly is permanently mounted inside the tank. This type assembly eliminates necessity for obtaining and averaging several "spot" temperatures, and permits an average reading through a vertical column of oil in one reading.

Source: Developed in cooperation with the Standard Oil Development Company of New Jersey, by Weston Electrical Instrument Corporation, Dept. FP, 641 Frelinghuysen Ave., Newark 5, N. J. . . . or for more information check FP 2427 on handy form, pages 2 and 3.

Collected bulletins cover viscosity, viscometers

Collection of 6 allied bulletins presents data and general information on viscosity and viscometers. "Viscosity Packet" is issued by Brookfield Engineering Laboratories, Inc., Dept. FP, Porter St., Stoughton, Mass. When inquiring specify FP 2428 on handy form, pages 2 and 3.

WHY ARE MORE BRISTOL RECORDING GAUGES BEING USED THAN ALL OTHERS COMBINED?

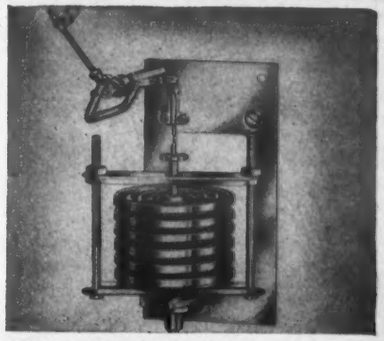
The heart of the pressure gauge is the pressure measuring element.

Hundreds of thousands of Bristol recording gauges in use all over the world, operating under all kinds of conditions, testify to the high accuracy, long life, and permanent calibration of Bristol's element.

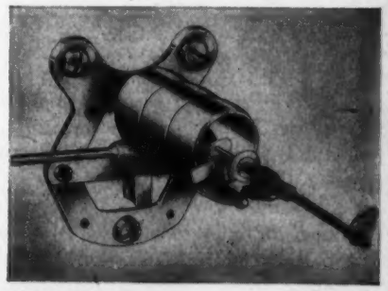
Many Bristol gauges have been in constant service for 20, 30 and 40 years!

Now Bristol presents its *new* line of Series 500 recording pressure gauges in ranges from 0 to 6 millimeters mercury absolute to 0 to 10,000 psi. They have many outstanding new features which make them easier to use, convenient to service, readily convertible. And they incorporate the three most advanced designs of measuring elements.

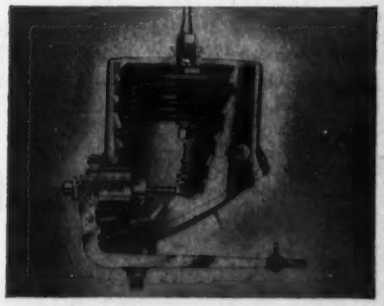
Models are available for recording, automatic controlling, pneumatic transmission and telemetering. Immediate delivery on many ranges. Write for new 32-page Catalog G621. THE BRISTOL COMPANY, 143 Bristol Road, Waterbury 20, Conn.



FOR LOW PRESSURE RANGES—new Type E measuring element is used for ranges from 0-2 in. water to 0-29.9 psi pressure or vacuum. Extremely high torque gives positive pen positioning across entire range. Highly accurate, extremely stable. 250% inherent over-range protection.



FOR INTERMEDIATE AND HIGH RANGES—new helical measuring element is for ranges from 0-30 psi to 0-10,000 psi. Special non-ferrous alloy—heat-treated to withstand impact of rapid fluctuations—gives permanent accuracy over a long period of service life.



FOR ABSOLUTE PRESSURE—new single-bellows type element measures ranges as low as 0-6 mm. mercury absolute and gives direct reading of pressure above absolute zero inherently corrected for barometric variations—with far greater accuracy than ever before.

THE DEPENDABLE GUIDEPOST OF INDUSTRY

BRISTOL

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

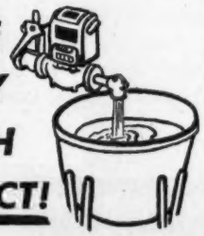
When inquiring check FP 2429 on handy form, pgs. 2-3

1/8" HERE
BOTCHES THE BATCH BY A GALLON

Why risk it?

PUT IN ACCURATE, CLEAN NEPTUNE METERS AND

MAKE EVERY BATCH PERFECT!



Inaccurate liquid measurements can add up to tremendous waste of materials, time, and effort—to say nothing of lost quality. For instance, it's tough to read a gauge stick down inside a 4-ft. tank, yet an error of just ⅛ in. means a whole gallon too much or too little liquid added.

For formula-perfect batches time after time — automatically — put a Neptune Auto-Stop Meter in every liquid supply line. The operator pushes buttons to set the quantity desired, opens the valve, and the Auto-Stop shuts off at the right point—accurately—keeping your inventory and production figures for you as it goes along.

Neptunes have greater accuracy, longer life and lower maintenance because they're simpler, cleaner, precision built. Many types available for any liquids where sanitary or corrosion factors permit composition bronze.

NEPTUNE *liquid* METERS

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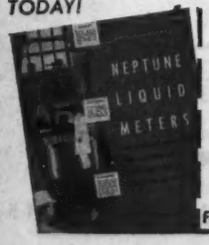
Send for Bulletin 573 TODAY!



NEPTUNE METER COMPANY
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☐ *Rush Bulletin 573*

We're interested in metering

☐ *Liquid Sugar and Syrups* ☐ *Water*

Name.....

Company.....

Address.....

fg

When inquiring check FP 2430 on handy form, pgs. 2-3

PROCESS INSTRUMENTATION

Camera need not be used to record a single oscillogram . . .

device traces repetitive pattern on paper

It has always been possible to make a photographic recording of cathode-ray oscillogram. However, the camera is not always available or the amount of effort to set it up seems too great to serve just for one oscillogram. A recently perfected device offers a simple means of tracing a repetitive pattern accurately on paper.

The Oscillo-Tracer is an optical super-positioning device, using a double-coated lens. An arm carrying the lens is adjustable in length to fit any standard oscilloscope. In its proper position, arm will place lens at equal distance from oscilloscope and from base level of oscilloscope. Operator's eye above lens sees a reflection of the cathode-ray trace superimposed on the paper directly below the lens. A small lamp is provided in the base.

In addition to tracing oscillograms, the device is used in 1) reading traces on graph paper scales, i. e., log, semi-log, decrement, etc., 2) increasing accuracy by eliminating parallax due to the use of curved face cathode-ray tubes and flat plastic scales, 3) comparing traces by superpositioned method, 4) detecting small, slow changes of patterns, 5) precise measurement of trace amplitudes and wave forms, 6) for accurate determination of production test results measured with oscilloscopes.

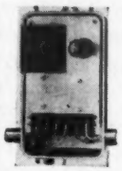
Standard arm adjusts to permit use with oscilloscopes having tube-center-to-table distances of 9 to 12". Lens is special, double-coated, high reflection upper surface, high transmission lower surface. Stable, cast base has internal lamp. Power is 115 volts, 6 watts. Lamp used is S-6 Mazda. Weight is 2½ lb.

(Oscillo-Tracer is a development of Robert A. Waters, Inc., Dept. FP, 4 Gordon St., Waltham, Mass. . . . or for more information check FP 2431 on handy form, pages 2 and 3.)

Instrumentation described

Non-technical story of instruments used in various fields is given in 12-page booklet. "It's All Done With Instruments" is issued by Weston Electrical Instrument Corp., Dept. FP, 614 Frelinghuysen Ave., Newark 5, N. J. When inquiring specify FP 2432 on handy form, pages 2 and 3.

Lumenite OFFERS DEPENDABLE AUTOMATIC CONTROLS



LUMENITE LIQUID LEVEL CONTROLS
Electronic action maintains and/or signals exact levels to 1/100 in. Floatless—no moving parts—sanitary—trouble free—no upkeep. For any liquid in any container—hot or cold—pressure or open. Easy installation. Write for detailed bulletin L-141.

LUMENITE TIMING CONTROLS

Complete line of industrial operation timers—manual or automatic reset. Time switches and timers. Improved and simplified construction. Write for bulletin T-141

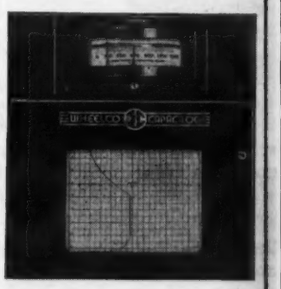
LUMENITE MAGNETIC CONTACTORS

Electrically operated and held switches for heavy loads. Work with Electronic Level or Time Controls. Reversing switches—transfer switches. New noiseless operation. Write for bulletin C-141

Lumenite Electronic Co.
407 S. Dearborn St., Chicago 5, Ill.

When inquiring check FP 2433 on handy form, pgs. 2-3

wheelco recorder



a direct reading, deflection type, strip chart recorder, the CAPACILOG, gives you continuous fast, simple and accurate reproduction of industrial processes. You get measurement, indication and control with a permanent record of variables in the process industries. Leading manufacturers in various industries specify WHEELCO CAPACILOG to make their production and process equipment more efficient—more valuable—more economical.

SPECIFY WHEELCO FOR INSTRUMENTALITY

Wheelco Instruments Company
855 W. Harrison Street, Chicago 7, Illinois

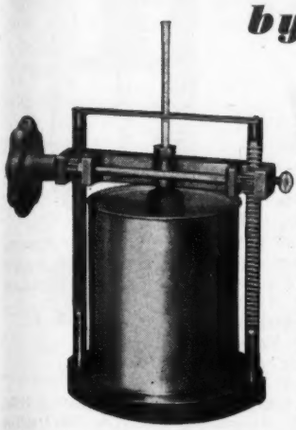
wheelco *electronic controls*

When inquiring check FP 2434 on handy form, pgs. 2-3

Center-of-can Temperature

ACCURATELY MEASURED

by Taylor

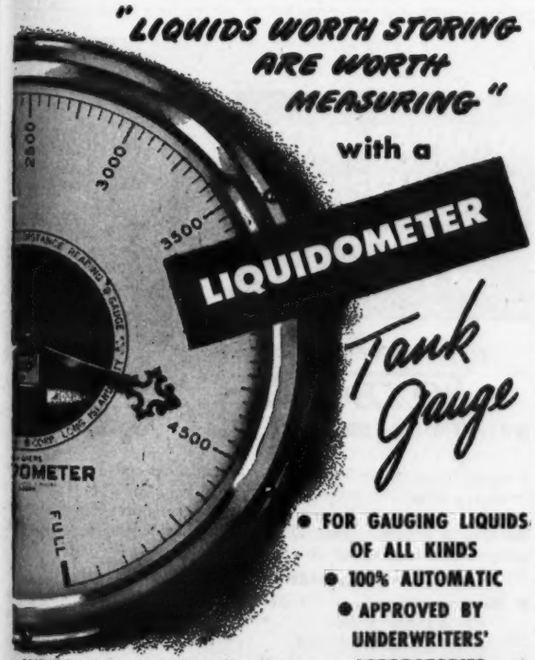


FOR accurate center-of-can measurement, you can't beat the Taylor Can Test Machines. They retain maximum heat by keeping in hot vapors and juices. They assure accuracy by exact centering of the thermometer. And they fit all popular can sizes. Rugged construction. 18-8 stainless steel piercing blade stays sharp, cleans itself. Write for **Catalog 500! Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada.** *Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.*

$38.50

PROMPT DELIVERY

When inquiring check FP 2435 on handy form, pgs. 2-3



- FOR GAUGING LIQUIDS OF ALL KINDS
- 100% AUTOMATIC
- APPROVED BY UNDERWRITERS' LABORATORIES

WRITE FOR COMPLETE DETAILS

THE LIQUIDOMETER CORP.
3925 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

When inquiring check FP 2436 on handy form, pgs. 2-3

PROCESS INSTRUMENTATION

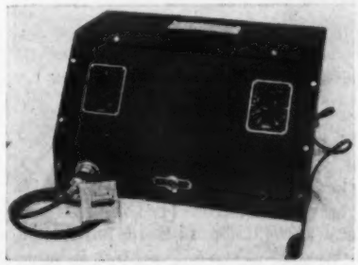
Detects, also counts and records particles in gases or fumes . . .

sensing element is unaffected by ambient temperatures

Uses: To detect small or large liquid drops or solid particles in gases. Has been applied to determining presence of liquid particles in fumes from roasting stack of a soluble coffee plant. Can also be used to assure that a flow of discrete particles continues, in which case the instrument is arranged to signal their absence.

Features: Sensing element employs a ceramic cartridge that is unaffected by ambient temperatures between –30 and 80°C and by relative humidities up to 95%. Probe of the element uncouples from the ceramic cartridge when not in use, thus protecting assembly from impact.

Description: A particle impinging on the probe of the "Flow Detector-Amplifier" causes a voltage to be generated by a transducer coupled



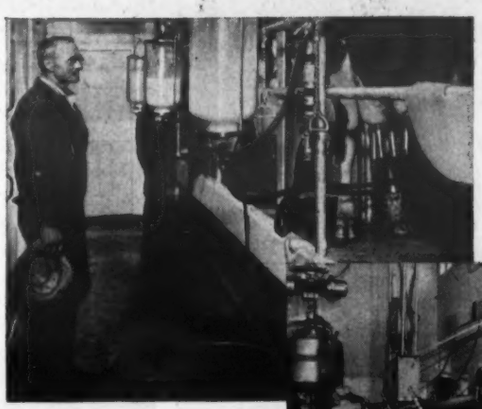
Sensing probe (lower left) may be used at a distance from instrument if desired

to the probe. Voltage is amplified and then peak-detected and results in one pulse of controlled width for each particle hitting the probe.

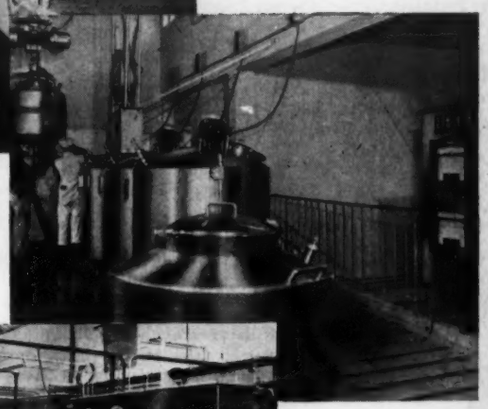
The standard instrument is capable of driving a 1 ma Wheelco-type recorder. Variations of the standard output circuit are available to fit specific applications. Typical variations include relay contact, meter mounted on front panel, incorporation of various counters or recorders, and short or long period output pulses.

Two controls are provided: a "gain" control to permit large variations of particle size, and a "zero" control to balance the output circuit of the device.

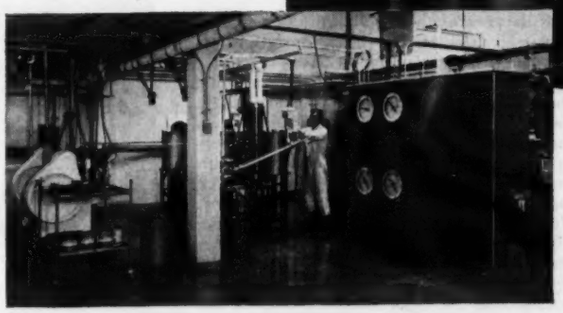
Source: Product of Rochester Electronics Co., Inc., Dept. FP, Rochester 7, N. Y. , . . or for more information check FP 2437 on handy form, pages 2 and 3.



MILK *goes directly from cows to weigh jars, enabling farmer to keep performance records. Milk then goes to "farm tank" via pipes . . . under vacuum, and without cooling.*



HOISTED *on monorail, the farm tank is weighed and then connected to plant's processing tanks. Honeywell Control Panel is at right.*



MILK *goes from preheating tank to this room . . . where it is homogenized, sterilized and canned. At no time has the milk been in contact with the air.*

CANNING WHOLE FRESH MILK

New process, utilizing Honeywell Control System, keeps milk fresh for 6 to 12 months without refrigeration.

Now, fresh whole milk can be shipped anywhere in the world without fear of spoilage . . . as a result of a revolutionary process developed by Dr. Roy R. Graves of International Milk Processors, Inc.

At no time, in the process, is the milk exposed to the air . . . from the cow to the can! Replacing conventional pasteurization with sterilization, the process destroys not only the pathogenic organisms but also other organisms and enzymes which cause spoilage.

Partner for the process is a unique Honeywell Control System that automatically regulates preheaters, heaters, homogenizers, sterilizers and canning equipment. All vital temperatures are recorded . . . all variables rigidly controlled. Honeywell's undivided responsibility in providing *complete* control, with centralized supervision, has helped make this new process a successful one.

For any complex food processing operation . . . wherever there is a need for creative instrumentation with undivided responsibility . . . you can rely on Honeywell to fulfill the requirements. And whatever *your* requirements . . . whether usual or unusual . . . consult Honeywell first.

Send for literature or call in our local engineering representative, who is as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4566 Wayne Ave., Philadelphia 44, Pa.

MINNEAPOLIS **Honeywell**

Brown Instruments

When inquiring check FP 2438 on handy form, pgs. 2-3

EXACT WEIGHT Selectrols (electronically operated) automatically check-weighing after-dinner mints in the plant of Thos. D. Richardson Co., Philadelphia, Penna.

Spend Weighing Equipment Dollars Wisely . . . .

The facts are that practically everything processed uses scales. Such operations as ingredient compounding, laboratory work, blending, packaging and production line checkweighing are the most common in the food industry. Many food products owe their exceptional uniformity and goodness to sound scales. Engineers entrusted with profitable production now generally agree the weighing element is one of the most vital cost control measures at their disposal. This is why weighing equipment dollars should be spent wisely. Few individual equipment requirements do more to improve quality than the right weighing units in the right place, and no weighing equipment is better than EXACT WEIGHT Scales. Today these famous scales are doing more varied jobs, in more plants, in manual, semi-automatic and fully automatic operations than ever before. Their capacity to save time, money, product and labor are well recognized by men responsible for plant operation everywhere. Write or call us about your job.

EXACT WEIGHT Scale (Model 233). Tu-way vision tower; compact (fits into any production line); weighing platter or scoop as desired. Sensitive to ¼ oz. over and under weight. Capacity to 3 lbs.

EXACT WEIGHT SCALES

Industrial Precision

THE EXACT WEIGHT SCALE COMPANY

909 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., West • Toronto 18, Canada

When inquiring check FP 2439 on handy form, pgs. 2-3

Make on-the-spot pH readings anywhere with pocket-size meter and probe unit . . .

calomel and glass electrodes combined with sample holder to eliminate supports and beakers.

Uses: Pocket-size meter and companion probe unit for on-the-spot pH determinations anywhere. Scaled from 2 to 12 pH, with adjustment for readings from 0 to 14.

Features: Calomel and glass electrodes are combined with sample holder in a single polyethylene probe unit. This feature eliminates support and beakers, protects elec-

Pocket-size pH meter and companion probe unit with carrying case

trodes, and makes possible sample volumes of merely 0.5 ml. Accuracy of 0.1 pH can be attained.

Description: "Pocket pH Meter and Probe" is self-contained and complete with batteries (hearing-aid type for 1300 hours service) and plastic tubes of buffer and KCl solutions — all housed in a 3 x 5⅞ x 2½" Bakelite case. Weight is 3 pounds. Electrometer tube, switch and input connector are sealed in a single unit for freedom from high humidity. Grounded samples can be measured directly since there are no external power connections. Control is by means of one knob.

Source: Analytical Measurements Incorporated, Dept. FP, 585 Main St., Chatham, N. J. . . . or for more information check FP 2440 on handy form, pages 2 and 3.

No floats or electrodes used in switch that warns of high liquid level . . .

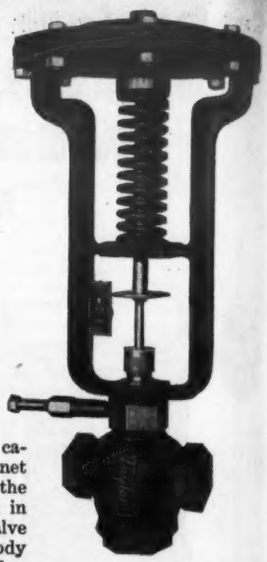
operates by action of air in compression bell and resulting movement of diaphragm and rods

Uses: As an auxiliary high level safety switch, operating either audible or visible alarms. Provides for protection of overall operations and also of equipment. Used on clear well or surge tanks, elevated tanks, sumps, vats and a range of process operations.

Features: Needs only ½" rise in water level above normal to operate. Switch is entirely independent of all other control equipment. Being a non-float, non-electrode device, it is not affected by low temperatures. It will not deteriorate and become useless with age.

Description: Simple in design and ruggedly con-

HI-FLOW* means HIGH CAPACITY



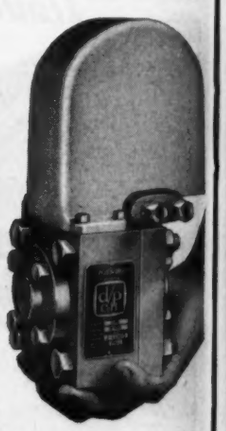
This Taylor HI-FLOW Valve is a single-seated diaphragm valve in the 150 pound class with *maximum* capacity. In fact, it gives you a net flowing area equal to 90% of the corresponding pipe size. And in some cases, the HI-FLOW Valve enables you to use a smaller body size than usual. Features: **Inherent tight shut-off; Easy maintenance; Long life; Cast iron or Motosteel* diaphragm motor. Write for Bulletin 98183,** or ask your Taylor Field Engineer! Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.*

*Trade-Mark

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

When inquiring check FP 2441 on handy form, pgs. 2-3

SIMPLER FLOW MEASUREMENT in the palm of your hand



NEW! MERCURY-LESS!

FOXBORO

DIFFERENTIAL PRESSURE CELL

Simplify troublesome flow problems . . . especially where corrosion is a factor or the use of mercury is objectionable. This unique flow measuring device — the Foxboro d/p Cell — reduces installation and operating costs, combines measurement and transmission in one simple, compact unit.

OUTSTANDING FEATURES

- *Uses no mercury*
- *Steel or Stainless Steel Construction*
- *Zero Displacement*
- *Weighs only 19 pounds*
- *Easily calibrated*
- *Ranges: 25" to 800" H_2O*

WRITE FOR BULLETIN 420. The Foxboro Company, 17410 Neponset Avenue, Foxboro, Mass., U.S.A.

FOXBORO ACCURATE FLOW MEASUREMENT

When inquiring check FP 2442 on handy form, pgs. 2-3

structed with standard NEMA IV enclosure, unit is shipped complete. Switch is equipped with a pressure bell and connecting pipe, and a bottom plate, diaphragm and contact assembly in the standard NEMA enclosure. Operation is accomplished by compression of air in bell chamber causing upward movement of diaphragm. This closes contact completing alarm circuit. When level recedes contact is broken. Device is not suitable for corrosive materials or gases.

Source: "Hi-Level" safety switch is made by Automatic Control Co., Dept. FP, 1007 University Ave., St. Paul, Minn. . . . or for more information check FP 2443 on handy form, pages 2 and 3.

Accuracy in nephelometry depends upon correct instrument voltage . . .

transformer supplies nephelometer with constant voltage despite line fluctuations

Many instruments depend upon a proper, non-fluctuating supply voltage for their proper functioning. This is especially true of the nephelometer. This instrument requires a constant supply voltage in order to produce a beam of light of non-varying intensity for spotlighting impurities in liquids. Voltage fluctuations, resulting from a variety of causes, cannot be tolerated since they produce erroneous measurements.

A means for circumventing supply voltage variations — no matter what they may be — is illustrated in the photonephelometer made by Coleman Instruments, Inc., Maywood, Ill. Here, a steady 6-volt, 60-cycle supply is required, and is continually supplied by a separate constant voltage transformer connected in the instrument circuit. Proper performance of the instrument can be expected at all times.

Despite fluctuations in line voltage, constant voltage transformer (left) supplies nephelometer (right) with constant voltage to produce a beam of light of non-varying intensity for accurate measurement of impurities in liquids

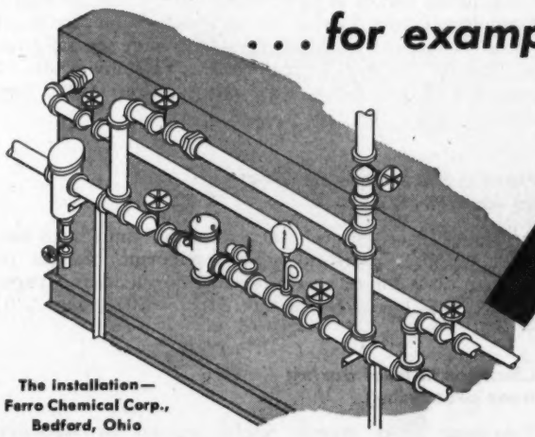
The nephelometer is finding important applications in measuring the unappealing cloudiness in beverages, and in detecting bacterial contamination in serums. It is being used for detecting impurities in boiler water.

(Constant voltage transformers are products of the Sola Electric Company, Dept. FP, 4633 W. 16th St., Chicago 50, Ill. . . . or for more information check FP 2444 on handy form, pages 2 and 3.)

for outstanding service

on Steam to Drying Ovens

. . . for example



The installation—Ferro Chemical Corp., Bedford, Ohio

. . . Install Dependable Quality CRANE VALVES

No. 960 Crane Brass Pressure Regulator for steam or air. Literature on request through your Crane Branch or Crane Wholesaler.

PROBLEM: To maintain automatically, within close limits, uniform reduced steam pressure from supply line to battery of two drying ovens controlled by individual thermostatic valves.

WORKING CONDITIONS: Initial steam pressure of 70 psi to be reduced to 13 psi, and maintained without significant fluctuation whether one, both, or neither of the ovens is being operated.

SOLUTION TO PROBLEM: One No. 960 Crane Brass Pressure Regulator, properly selected for capacity required, and with adequate condensate drainage provided.

RESULT: For more than 5 years, without interruption and with no more than routine maintenance, the Crane No. 960 Regulator has given complete satisfaction. Operating like new, and since all wearing parts are renewable, it will virtually never wear out. User remarks on unusual simplicity of adjustment.

Another typical case history, demonstrating the bigger value and lower ultimate cost of Crane Quality Valves. And why . . . More CRANE VALVES are used than any other make!

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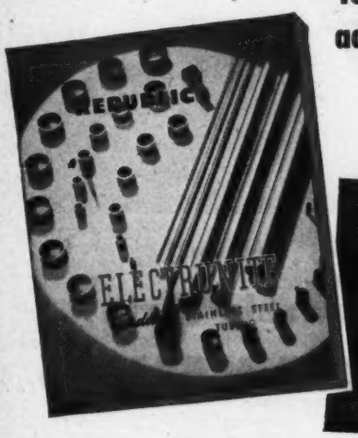
VALVES • FITTINGS • PIPE • PLUMBING • HEATING

When inquiring check FP 2445 on handy form, pgs. 2-3

USE STAINLESS STEEL TUBING

to its best advantages...



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How to handle each of these factors best is covered in the 28 pages of information, tables, and technical data in the free booklet "Republic Electrunite Enduro Stainless Steel Tubing." Your copy will be sent on request. Address

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When inquiring check FP 2446 on handy form, pgs. 2-3

Briefs · · · from contemporary publications

Here's a quick look at interesting articles appearing in other publications, . . . as selected by Technical Editor, Harry McCormack

Maintenance and repair of bakery equipment

First of series on this general subject. Ideas stated are applicable wherever equipment is used in processing. Fundamental factors in preventative maintenance are stated. Examples of record cards are included. Comparison of repair costs on two machines, same type, same age are given to illustrate that *regular* maintenance pays dividends. 4 pages. (*"Biscuit & Cracker Baker", August* 1951, *page* 29)

Plant maintenance costs cut by careful records

Article analogous to prior one except this emphasizes total plant as contrasted to processing equipment. Sample inspection cards for 12 month period are included. 3 pages, 3 tables. (*"The Glass Packer", August* 1951, *page* 570)

Changes in beef during heat processing

Four-page paper reports results secured by laboratory processing of shoulder clod cuts of beef. Change noted in tenderness, drained juice, moisture content and pH. Temperatures used ranged from 124°C to 107°C and processing times from 5 to 120 min. Sterilization values were also noted. Includes 4 figures and 4 tables. (*"Food Technology", July* 1951, *page* 296)

Flavor of quick frozen foods

Results on a laboratory study of adding monosodium glutamate in varying quantities to 8 frozen foods show that their flavor was sharpened. Data tabulated as to days in storage, minimum optimum, and maximum % of glutamate added. Results of taste tests also tabulated. Two tables are included in 1½-page article. (*"Quick Frozen Foods", July* 1951, *page* 59)

Experimental treatment of citrus waste waters

Citrus waste waters have presented problems as to satisfactory, non-objectionable disposal. Authors discuss methods in use and investigated cause of unsatisfactory destruction of organic material by anaerobic bacteria. Satisfactory solution was found, as indicated by experimental data. 4 pages. (*"Food Technology", August* 1951, *page* 319)

Keeping qualities of spray dried whole milk

Effects of spraying pressure and orifice size on keeping qualities of spray dried whole milk are covered in 10-page article. Reports on an investigation in which milk was spray dried and a study made as to particle size, particle characteristics and keeping qualities. Operation techniques are stated and equipment used described. Results of various tests are tabulated and commented on. Includes 7 tables and 1 figure. (*"Journal of Dairy Science", June* 1951, *page* 583)

Color measurement and control in canning tomato juice

Article contains results of experimental investigation of above subjects. Results attained in production of juice of standard color by blending tomatoes of varied color. Methods for color measurement detailed. Effects of processing on color were investigated, as were dilution and heat. 5 pages, 5 tables and 5 figures. (*"Food Technology", August* 1951, *page* 314)

Pork bellies cured in ten hours

Article describes a method recently developed for curing pork bellies and which has been operated in a packing plant for eight months. Necessary equipment and processing operations described. Product has received commercial acceptance where offered. Yields are somewhat higher than by customary practice. 2½ pages, 5 photos. (*"National Provisioner", August* 18, 1951, *page* 12)

Frozen strawberry quality improved by adding colloids

Authors report on experimental work directed toward improving frozen strawberries. Three colloids were tried in strawberry packs and it was found that results varied when colloids were used with dry sugar and when colloids were dispersed in liquid sugar. 2 pages, 2 figures. (*"Quick Frozen Foods", August* 1951, *page* 50)

Studies anaerobic digestion of packing house waste waters

Purpose of study stated to be: determine efficiency of method and its economic feasibility as compared with conventional aerobic treatment. Types of waste waters treated are stated. Treating plant described. Operating technique given. Results are tabulated. Conclusions reached from study are stated. 16 pages, 7 figures, 4 tables. (*"Proceedings of Third Conference on Research, American Meat Institute", March* 1951, *page* 63)

Cottonseed oil extraction with normal hexane and methylpentanes

Article reports experimental results on extractions made with hydrocarbon solvents. Fourteen extractions were made with certain solvents and varied flake preparation. Extraction data tabulated. Oils obtained from extractions are evaluated as to free fatty acid, refining loss and color. Results tabulated. Experimental runs in a 200 ton per day commercial plant were made and results from N-hexane

and methylpentane compared. Advantages of methylpentane as solvent are told. 4 pages, 2 tables and 2 figures. (*"Journal of American Oil Chem. Soc."*, *August* 1951, *page* 348)

History of multi-stage and continuous mixing

Article discusses mixing of doughs and batters. Comments on development of various types of continuous mixing equipment. Describes equipment in present use. Compares multi-stage and continuous operations. Summarizes advantages believed to be possessed by the continuous mixing processes. 6 pages, 14 figures. (*"Baker's Digest"*, *August* 1951, *page* 19)

Mechanically removing hidden infestation in grain

Article reports results of an experimental study of this subject. Samples removed for examination after each cleaning operation. Flow sheet shows path of grain through cleaning equipment. Results at various stages in cleaning operations are tabulated. 2 pages, 2 figures, 2 tables. (*"American Miller"*, *August* 1951, *page* 21)

Employer-employee responsibilities in occupational hazards

Author comments on the responsibility of the employer to provide necessary safety devices and on the responsibility of the employee in making use of them. Cites some court decisions relating to known and unknown hazards and to risks inherent in the job. (*Plant Engineering*, *Aug.* 1951, *page* 91)

Yeast doughs for frozen storage

Study was concerned with the effects of: varied fat content, type of yeast, and water or whole milk. Dough compositions and processing stated. Storage conditions for frozen dough given. Characteristics of breads made from stored frozen dough tabulated and discussed. Breads made from fresh dough and from stored, frozen dough are compared as to qualities. 6 pages, 3 tables. (*"Food Research, July-August* 1951, *page* 353)

Spectrochemical determination of copper and iron in commercial oils

A method is detailed which has been found to be accurate 0.001 ppm for copper and 0.01 ppm for iron. Describes necessary preparation of sample for spectrographic examination and preparation of standardization curve. Method checked against known added amounts of iron and copper. Eight oils used for copper and iron content, values tabulated. 2 pages, 2 tables. (*"Journal of American Oil Chem. Soc."*, *August* 1951, *page* 346)

Truck bunkers increase efficiency of dry ice

Article tells story of truck, its cargo and its travels. Bunker equipment described. Duration of trip, with temperatures maintained stated. Another test, with two trucks, one with dry ice bunker, the other without, compares load temperatures and dry ice consumption for the same loads and trips. 1½ pages, 2 photos. (*"National Provisioner"*, *June* 16, 1951, *page* 13)

"How are these new aluminum kettles doing?"

"Great, Mr. Clemens*, we've increased our production considerably."

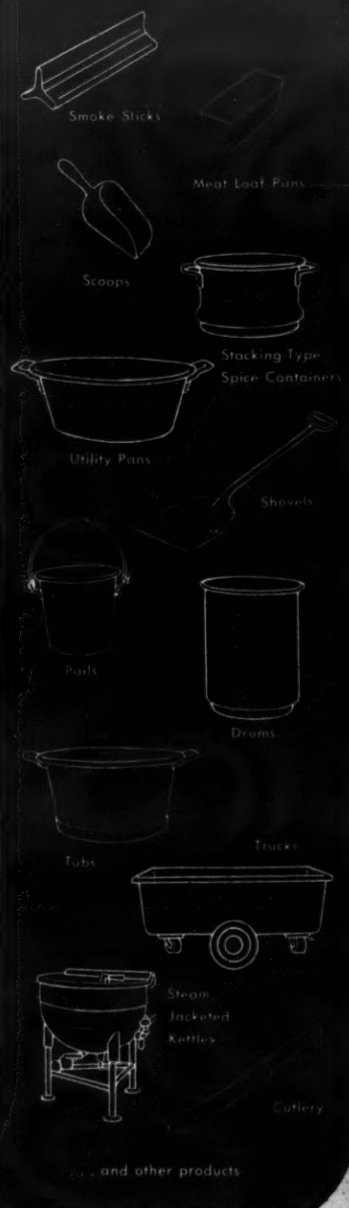
It's easy to understand why this and other food processors get enthusiastic about Wear-Ever Aluminum Steam Jacketed Kettles. For, when they convert to aluminum, the kettle department's production usually increases. This faster production is possible because aluminum spreads heat quickly and evenly *right to the top edge of the kettle.* Consequently, foods cook faster. And because the heat is spread so evenly, they cook better; scorching and burning are practically eliminated.

Moreover, every Wear-Ever Steam Jacketed Kettle—like all Wear-Ever food plant equipment—is made of an extra tough, extra hard aluminum alloy. Wear-Ever kettles have set amazing records for 20 to 30 years of continuous service—records which kettles made of the new hard alloy are sure to surpass some day.

For details on Wear-Ever's complete line of food plant equipment, see your Wear-Ever representative or mail the coupon below.

*Mr. Ezra S. Clemens
Hatfield Packing Co., Hatfield, Pa.

WEAR-EVER ALUMINUM EQUIPMENT FOR FOOD PLANTS



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Standard of Quality for more than 50 years
WEAR-EVER ALUMINUM TRADE MARK REG. U.S. PAT. OFF.

The Aluminum Cooking Utensil Company
6710 Wear-Ever Building, New Kensington, Pa.

Please send me full details about your line of sanitary, hard-alloy aluminum kettles and other food plant equipment.

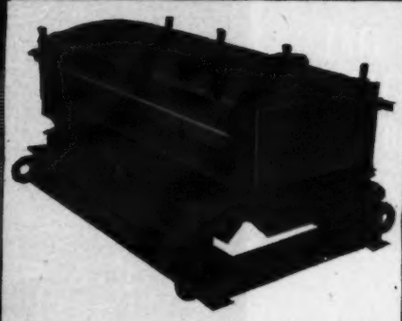
NAME .....

ADDRESS .....

Fill in, clip to your letterhead, and mail

When inquiring check FP 2447 on handy form, pgs. 2-3

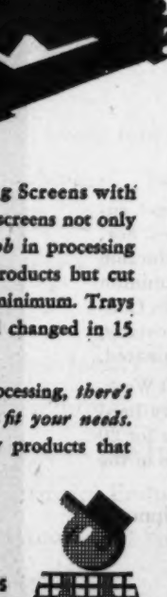
SIMPLICITY GYRATING SCREENS MEAN TOP PERFORMANCE—EASIER CLEANING



Simplicity Gyrating Screens with new improved type screens not only *do a faster, better job* in processing a wide variety of products but cut cleaning time to a minimum. Trays can be removed and changed in 15 minutes.

Whatever you're processing, *there's a Simplicity unit to fit your needs.* Here are just a few products that Simplicity Screens handle in efficient daily operation.

TOMATOES • SOY BEANS
PICKLE RELISH • CEREALS
JELLY • RICE • CHEESE
STARCH



Write today for full facts!

Simplicity

87 ENGINEERING CO. • DURAND, MICH.
FOR CANADA: Canadian Bridge Engineering Co. Ltd., Walkerville, Ont.

When inquiring check FP 2448 on handy form, pgs. 2-3

New Literature

Instruments covered in basic course

Two 7-¾ x 10" paper-bound books deal with modern instruments and instrument theory. The first, a 232-page volume, furnishes a background of technical information which is basic for a complete understanding of pressure and temperature instruments. It is, in itself, a basic course in principles, constructions and applications of instruments. It also clearly defines the quantities to be measured. In addition to being clear and concise, "Fundamentals of Pressure and Temperature Instruments" is illustrated with 215 drawings and halftones. Subject matter is well tied-in with instruments which are commercially available.

Second volume describes basic control theory, methods and mechanisms for obtaining basic control effects. Functions of each device are pointedly illustrated. Installation, adjusting, and checking procedures are given for several process industries. In addition to the text, a glossary is given. There is also a section which considers advanced control theory mathematically. Although this treatment does involve calculus, the explanations accompanying the derivations help considerably in keeping it understandable and useful. The 233-page book is illustrated with 198 drawings and halftones covering all the phases of the text. "Instruments and Process Control" is really an advanced continuation of the first book. These two volumes together comprise a practical background for instrument work.

To obtain either "Fundamentals of Pressure and Temperature Instruments," or "Instruments and Process Control" remit $3.45 direct to Delmar Publishers Incorporated, Dept. FP, Albany 1, N. Y. When inquiring specify FP 2449 on handy form, pages 2 and 3.

Suggests planned maintenance for processing equipment

Twelve-page, 2-color manual helps processors of milk and other foods lengthen life of centrifugal pumps, sanitary tubing and fittings. Many practical suggestions are given under such headings as correct installation, proper operation, adequate maintenance and thorough cleaning. Accompanying the instructions and recommendations are photographs, line drawings and dismantled views of equipment. Especially helpful is a "cause and effect" chart which provides a guide in trouble-shooting work on pumps. Similar information on the care of valves, fittings, and tubing outlines methods and check lists for a planned maintenance program with respect to this equipment. Planned Maintenance Manual No. 2 is issued by the Cherry-Burrell Corp., Dept. FP, 427 W. Randolph St., Chicago 6, Ill. When inquiring specify FP 2450 on handy form, pages 2 and 3.

Features damping device for moisture meter

Reading of scale on electric moisture meter for grain is made easier through incorporation of a damping device which reduces excessive galvanometer fluctuations due to non-uniformity in moisture content of samples. Average time of a determination is less than a minute and no weighing of samples is required. Damping device is operated by pressing a button. Meter is applicable to testing of varieties of rice, grain, sorghums, coffee, wheat, rye, oats, barley, buckwheat, corn, edible beans, flaxseed, vetch, lupine and soybeans. Bulletin 12442U is issued by Tagliabue Instruments Division, Weston Electrical Instrument Corporation, Dept. FP, 614 Frelinghuysen Avenue, Newark 5, N. J. When inquiring specify FP 2451 on handy form, pages 2 and 3.

How to use and maintain piping equipment told

Thirty-six-page manual covers the fundamentals of sound piping practices in easy, non-technical language. It discusses various types of valve designs and how each should be used; it illustrates and names over 80 types of fittings. More than half its pages are devoted to "how-to-do-it" features that are fully illustrated for easy understanding. Included is selection guide that saves time and effort in choosing valves for common piping services.

"Piping Pointers" is issued by Crane Company, Dept. FP, 836 S. Michigan Ave., Chicago 5, Ill. When inquiring specify FP 2452 on handy form, pages 2 and 3.

Covers all aspects of apples after harvest

Dealing comprehensively with chemistry, physiology, and technology of the apple fruit after harvest, this 486-page book is the second volume in series on Economic Crops. Divided into 15 chapters covering the handling, storage and utilization of apples.

One third is devoted to apple processing for dried, canned and frozen products. Specific information on apple juice, syrup, concentrates, cider, wine, brandy, vinegar, industrial alcohol, jelly, spreads, confections and utilizing waste.

To obtain "Apples and Apple Products" by R. M. Smock and A. M. Neubert, remit $8.75 direct to Interscience Publishers, Inc., Dept. FP, 250 Fifth Ave., New York 1, N. Y. When inquiring specify FP 2453 on handy form, pages 2 and 3.

How liquid level can control more than one pump

Methods of using two or more pumps for programmed operation are shown in 4-page publication. Pump controls are acutated by high and low liquid level. Several levels in the same tank can be used for control points. Methods of alternating pumps are shown, and specifications of typical systems are given. Bulletin 1110 is issued by Automatic Control Co., Dept. FP, St. Paul 4, Minn. When inquiring specify FP 2454 on handy form, pages 2 and 3.

Compressed air powers and controls slurry pump

Diaphragm slurry pump is powered and controlled by compressed air. Air operates diaphragm directly with no mechanical linkage. An electric timing solenoid valve on air line can be adjusted for desired number of

cycles per minute so that volume is controlled or set for proportioning. Corrosive and abrasive material is handled well due to the construction which has a minimum of moving parts and no rotary seals or stuffing boxes.

Six-page bulletin describes and illustrates pump and parts. Capacities (composite range of 1 to 100 gpm for 6 models) are given with lifts, heads, air pressure and air consumption in graph form. Details of piping layout are shown. The pump has been successfully used on a great variety of materials including thawed frozen berries and cane sugar mud. Bulletin 309-R is issued by Oliver United Filters, Inc., Dept. FP, 33 W. 42nd St., New York 18, N. Y. When inquiring specify FP 2455 on handy form, pages 2 and 3.

Synthetic resin paint explained

Eight-page brochure presenting characterisics, properties, uses and methods of application of synthetic rubber resin based coatings is issued by Casey and Case Coatings Co., Dept. FP, P. O. Box 151, Maywood, Calif. When inquiring specify FP 2456 on handy form, pages 2 and 3.

Variety of shredders shown

Specifications and illustrations for several sizes and models of knife-cutter are given in 8-page catalog. Equipment is adaptable to many types of products and is used on scrap leather, rags, metal foil, charcoal, roots and drugs, among others. Efficiency is reported to be very high.

Catalog 47 is issued by Mercer-Robinson Company, Inc., Dept. FP, 30 Church St., New York 7, N. Y. When inquiring specify FP 2457 on handy form, pages 2 and 3.

Describes bottle washing detergents for specific conditions

"Five Solutions for Your Bottle Washing Problems" is a 6-page, pocket-size booklet describing five specialized detergents and conditions under which they are recommended. Information summarized includes chemical composition, principal features and advantages, causticity factor, and charge for solution make-up in bottle washers.

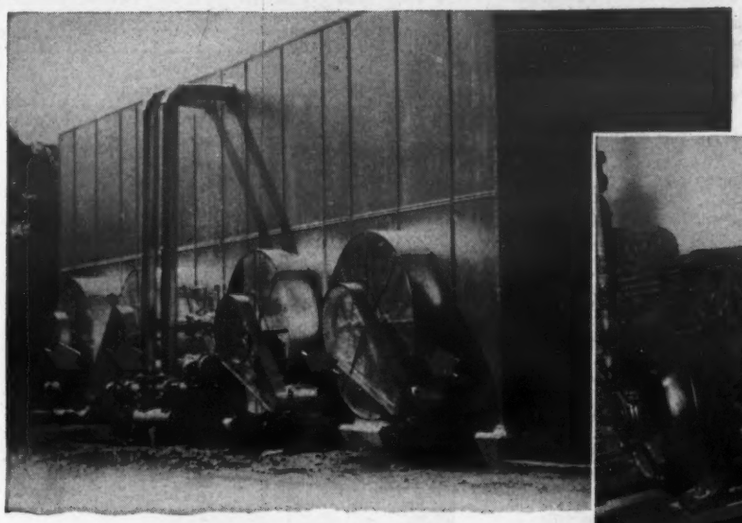
Issued by Diamond Alkali Company, Dept. FP, 300 Union Commerce Building, Cleveland 14, O. When inquiring specify FP 2458 on handy form, pages 2 and 3.

Directory lists biological labs

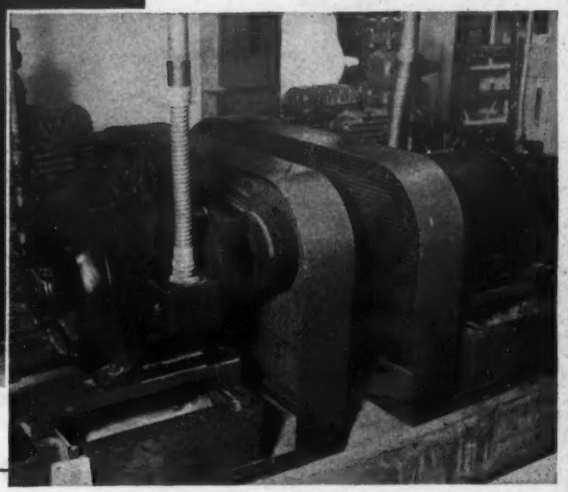
Paper-bound, 164-page directory lists, locates and identifies more than 1000 biological laboratories in the US and Canada. To obtain fifth edition of "Directory of Biological Laboratories" remit $3.00 direct to Burns Compiling and Research Organization, Dept. FP, 200 Railway Exchange Bldg., Chicago 4, Ill. When inquiring specify FP 2459 on handy form, pages 2 and 3.

Basic information on pH

Informative 2-page bulletin gives basic data on pH, especially its meaning, applications, and measurement. Tables show different values for common acids and alkalis, the intensity of acidity or alkalinity, and the most desirable range of industrial waters for different conditions and applications. Bulletin 28X7636 is issued by Allis-Chalmers Manufacturing Company, Dept. FP, 1114 S. 70th St., Milwaukee, Wis. When inquiring specify FP 2460 on handy form, pages 2 and 3.



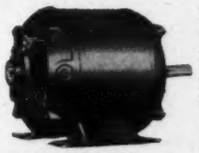
Four Century 5 horsepower splash proof motors driving fans.



Two Century 30 horsepower motors driving refrigeration compressors.

Century

TYPE SC-
SQUIRREL CAGE MOTORS



⅛ to ¾ horsepower

1 to 1½ horsepower

2 to 15 horsepower

20 to 125 horsepower

150 to 400 horsepower

Equipment Producers

Select Century Motors

To Give You Long-Life Performance With Least Down-Time

The correct selection of the right combination of motor type, speed, power, torque, frame and mounting keeps Century motors on the job.

Team work between your motorized equipment producers and Century motor engineers means that you always get the right motor—selected from Century's wide range of types and kinds, in sizes from ⅛ to 400 horsepower for single or polyphase alternating current and direct current. You can be confident that you get top performance from the fine equipment these motors drive.

Skillful application makes sure that Century motors meet the exacting requirements of the machines they drive. That's your assurance of dependability.

CENTURY ELECTRIC CO. 1806 Pine St., St. Louis 3, Mo.
Offices and Stock Points in Principal Cities

Century Electric Company is celebrating its 50th year in the electrical industry.

CE-690R

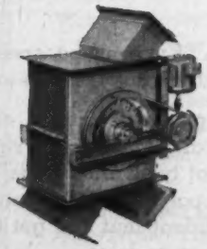
Specify Century C MOTORS for all your electric power requirements

When inquiring check FP 2461 on handy form, pgs. 2-3

NUTRITIOUS?

Customers don't think so!

The Dings Perma-Drum. In operation, non-magnetic material flows over the rotating drum shell in a normal trajectory. Magnetics are held fast to the surface of the shell (for one-half revolution) by the magnet inside until they are carried to a point beyond the magnetic field, to be separately discharged.



Type SA Perma-Drum. Includes inlet chute and separate discharge chutes for tramp iron and product being processed. Particularly suited for fully dust-tight installations in totally enclosed chutes or ducts.

THE SPIKE may be exaggerating things but the effect is the same. A Dings non-electric, permanent Perma-Drum* magnet (left) is powerful protection against tramp iron incidents like this ever happening to *your* customers.

Here's why:

- Positive Iron Extraction Due to Maximum Magnetic Power. No Magnetic drum, electric or non-electric, is stronger.
- Edge to Edge Protection. No dead spots, no chance for iron to slip by.
- Non-Electric, Permanent. Magnetic permanence is guaranteed forever.
- Certified Magnetic Strength.
- Meets All Insurance and Underwriters' Requirements.
- Completely Automatic Tramp Iron Separation.

The Perma-Drum is installed directly in the line of flow of material—in chutes, bins or spouts. Moisture has no effect on this unit. For full details on the modern way to solve your tramp iron problems, SEND NOW FOR THE PERMA-DRUM CATALOG.

DINGS MAGNETIC SEPARATOR CO.
4742 W. Electric Avenue, Milwaukee 46, Wis.

YOU WON'T SAY "DANG IT"
IF YOU "DING IT"

Dings "HIGH INTENSITY"

DINGS Certified MAGNETIC STRENGTH

When inquiring check FP 2462 on handy form, pgs. 2-3

NEW LITERATURE

Processing equipment briefly described

General 8-page bulletin pictures and describes 25 pieces of equipment. Many types of mills, crushers and separators are shown, with special emphasis given to hullers, shellers, cleaners and separators, nut granulators and the like. This bulletin is intended as an index of various types of equipment available; further information is available from the manufacturer on all equipment shown in it. Bulletin 52 is issued by The Bauer Bros. Co., Dept. FP, 1728 Sheridan Ave., Springfield, Ohio. When inquiring specify FP 2463 on handy form, pages 2 & 3.

Details thermometers

Eight-page bulletin describes and specifies wide range of thermometers, including a special model for use in freezers. "Auto-Lite Thermometers" is issued by Instrument and Gauge Div., The Electric Auto-Lite Company, Dept. FP, Toledo 1, Ohio. When inquiring specify FP 2464 on handy form, pages 2 and 3.

Conveyors at work

Sixteen-page catalog on roller conveyors features many pictures of actual installations. Data and diagrams are given, and wheel type conveyors are explained. Catalog 60 is issued by Dept. 9, The E. W. Buschman Company, Dept. FP, Clifton & Spring Grove Aves., Cincinnati 32, Ohio. When inquiring specify FP 2465 on handy form, pages 2 and 3.

Floor repair outlined

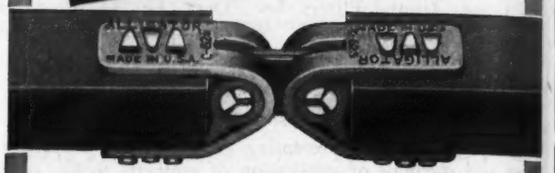
Pocket-size, 32-page booklet analyses floor maintenance, telling where to look for and how to correct bad floor conditions. Material covers wood and concrete floors. "Over the Rough Spots" is issued by the Stonhard Company, Dept. FP, 525 Stonhard Bldg., 1306 Spring Garden St., Philadelphia 23, Pa. When inquiring specify FP 2466 on handy form, pages 2 and 3.

Sheet packing shown

Eight-page, two-color bulletin lists, illustrates and describes sheet packings of asbestos and fiber. Twelve types are shown with specifications. "Asbestos and Fibre Sheet Packings" is issued by Packing Div., Raybestos-Manhattan, Inc., Dept. FP, Manheim, Pa. When inquiring specify FP 2467 on handy form, pages 2 and 3.

Now you can fasten V-belts by using

ALLIGATOR
V-BELT FASTENERS



● Alligator V-Belt Fasteners and open-end (long length) V-belting in rolls will enable you to make up multiple V-belt drives for a wide variety of applications.
Available for B, C and D sizes of V-belting.
Not to be used for repairing endless cord V-belts.
Bulletin V-211 will give you complete details. A copy mailed on request.

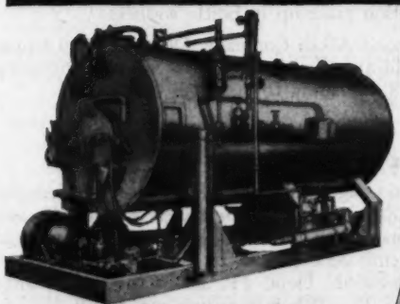
Order from your supply house

FLEXIBLE STEEL LACING COMPANY
4639 Lexington St., Chicago 44, Illinois

Also sole manufacturers of Alligator Steel Belt Lacing for flat conveyor and transmission belts and FLEXCO Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.

When inquiring check FP 2468 on handy form, pgs. 2-3

MODERNIZE with the AMESTEAM GENERATOR



HERE ARE THE FACTS!

● COMPLETE ● COMPACT
● ACCESSIBLE ● EFFICIENT
● AUTOMATIC

10 to 500 h. p. —
15 to 200 lbs.

WRITE FOR YOUR COPY

AMES IRON WORKS
BOX 2110 OSWEGO, N. Y.

Builders of Better Boilers since 1848
Manufactured under License in Canada by VOLCANO, Ltd., Montreal, P. Q.

When inquiring check FP 2469 on handy form, pgs. 2-3

Only one moving part used in steam trap

Two-color, 24-page bulletin gives details of impulse steam trap using only one moving part. Not actuated by bellows, trap uses a balanced piston which controls orifice opening according to amount of condensate to be drained. Under light load, output is short pulses interspersed with trickle; under heavy load, discharge is heavy and continuous with trap wide open. Typical performance of ½" trap is: capacity at 100 psi, 1290 lb/hr condensate, 39 lb/hr discharged if there is no condensate. The minimum figure is 3% of capacity. Unlike conventional traps, discharge is immediate when steam is turned on, making the trap useful for quick heating applications.

Publication outlines general uses for steam traps, explains impulse type, gives method and data for figuring needed size, and shows typical applications. In addition, installation and application suggestions, charts for sizing condensate lines, and a short steam table are included. Bulletin T-1740 is issued by Yarnall-Waring Company, Dept. FP, Mermaid Lane, Philadelphia 18, Pa. When inquiring specify FP 2470 on handy form, pages 2 and 3.

Motors shown

Four-page bulletin covers complete motor line. Bulletin G51-1 is issued by Wagner Electric Corp., Dept. FP, 6400 Plymouth Ave., St. Louis 14, Mo. When inquiring specify FP 2471 on handy form, pages 2 and 3.

How to obtain long service life from stainless steel

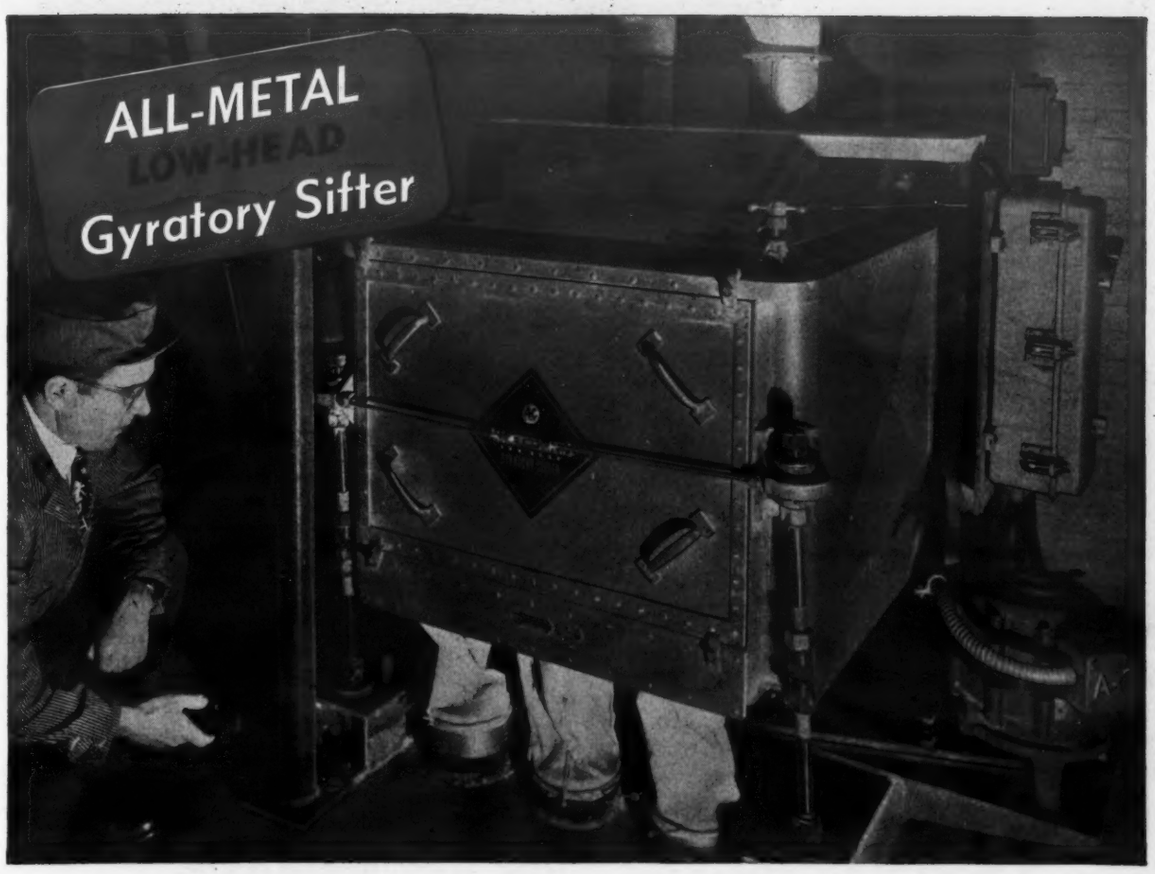
Numerous suggestions for caring for stainless steel equipment to make it last longer and provide better service are provided in 20-page booklet. Four-page discussion of what stainless steel is precedes general information on how to keep it clean, methods for cleaning, effect of various solutions on stainless steel surfaces, and discoloration. Nine "don'ts" conclude the booklet, which is issued by Cherry-Burrell Corporation, Dept. FP, 427 W. Randolph St., Chicago 6, Ill. When inquiring specify FP 2472 on handy form, pages 2 and 3.

Standard heat sealing unit featured in bulletin

Eight-page bulletin gives detailed specifications of several heat sealers. Seven photographs illustrate various models. "Electronic Heating" is issued by Progressive Electronics Co., Inc., Dept. FP, 130 Eighth St., Passaic, N. J. When inquiring specify FP 2473 on handy form, pages 2 and 3.

Refrigeration catalog has manual section

Much practical information, including heat leakage factors of common types of insulation, specific and latent heats of many perishable foods, and average values for air infiltration loads is given in the reference-manual section of catalog. Methods of calculating refrigeration requirements of rooms, cabinets and coolers are shown. Indexed and sectionalized catalog is issued by Kold-Hold Manufacturing Company, Dept. FP, Lansing, Mich. When inquiring specify FP 2474 on handy form, pages 2 and 3.



High Capacity and-It's SANITARY!

COMPACT!

Low-Head design provides for easy installation . . . needs little floor space.

VERSATILE!

Handles flour, sugar, starch, nut meats . . . hot or cold dry products.

HIGH CAPACITY!

Sifter's high speed operation contributes to large production capacity.

ALL-METAL!

Made of magnesium and steel for long, dependable operation and easy cleaning.

HAS VARIETY OF FOOD INDUSTRY APPLICATIONS

KELLOGG COMPANY in Battle Creek, Michigan, uses all-metal *Low-Head* gyratory sifters for recleaning and grading flaking grits as they come direct from storage tanks . . . thus safeguarding product purity and "brand name" reputation.

Food industry men from coast to coast find this sanitary machine ideal for many sifting and grading applications. They like its strength and smooth performance . . . and they appreciate its ability to handle high-temperature or abrasive products safely. Ease of cleaning—by air hose, steam or by *washing* with hot or cold water — is another well-liked feature.

This all-metal sifter may be the answer to a sifting problem in *your* food industry plant. Get full details from our nearby sales representative, or write to Allis-Chalmers, Milwaukee 1, Wisconsin. A-3485

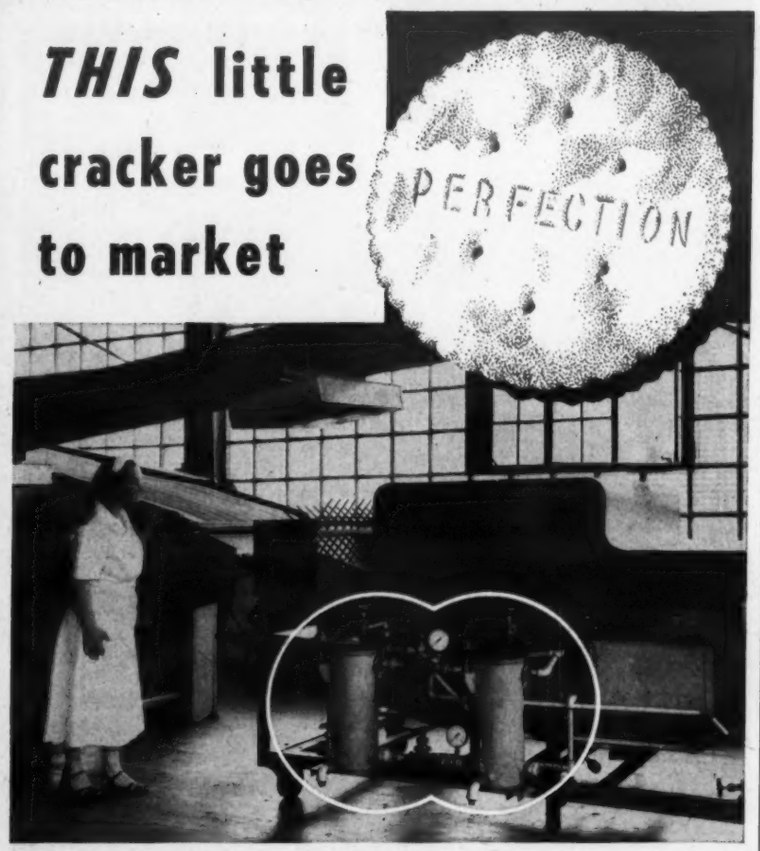
Low-Head is an Allis-Chalmers trademark.

ALLIS-CHALMERS

Serving the Food Industry for 104 Years

When inquiring check FP 2475 on handy form, pgs. 2-3

THIS little cracker goes to market



. . . with a smooth, uniform and delicious coating of vegetable oil, thanks to the Bowser filters in the photograph above.

There was a time when crumbs and salt particles stopped up the spray nozzles . . . gave the crackers a "hit and miss" coating that was not up to the high standards of the Perfection Biscuit Company of Fort Wayne, Indiana.

Bowser filters quickly and permanently solved the problem . . . stopped costly shutdowns . . . made every cracker a regular "smoothie."

●

If you have a liquid handling problem . . . whether it's filtering, processing, blending or packaging . . . chances are we can help you solve it.

●

BOWSER

LIQUID CONTROL SPECIALISTS SINCE 1885

BOWSER, INC., 1304 Creighton Ave., Fort Wayne 2, Indiana

• **HAVE YOUR LIQUID HANDLING ENGINEER CONTACT US**

MAIL TODAY

NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

When inquiring check FP 2476 on handy form, pgs. 2-3

NEW LITERATURE

Features engineering data on woven wire belts

Two-color, 35-page catalog features six pages of data, both general and specific, concerned with woven wire belt conveyors. Power formulae, analyses and working temperature tables, wire gauges and conversion tables are included. In addition, the publication illustrates numerous installations, giving recommendations of alloy and cloth types to be used. Catalog 31 is issued by Korb-Pettit Wire Fabrics and Iron Works, Inc., Dept. FP, 1505-15 N. Mascher St., Philadelphia 22, Pa. When inquiring specify FP 2477 on handy form, pages 2 & 3.

How to use steam more efficiently

Eight-page, two-color booklet tells how economies can be effected in using steam more efficiently. In the form of 16 questions and answers, this publication is slanted for executive, rather than maintenance department reading. Booklet 2171 is issued by Sarco Company, Inc., Dept. FP, Empire State Bldg., New York 1, N. Y. When inquiring specify FP 2478 on handy form, pages 2 and 3.

Furnishes data for selecting mixers

Two-color, 16-page bulletin gives curves and engineering data needed to properly specify mixing requirements. Special designs are recommended where problems of the material to be handled require them. Bulletin 74 is issued by International Engineering, Inc., Dept. FP, Dayton 1, Ohio. When inquiring specify FP 2479 on handy form, pages 2 and 3.

Gives properties of 20 tubing steels

Technical data on tubing for the food and pharmaceutical industries is presented in eight-page bulletin. Included are analyses and tables of physical and mechanical properties as well as application data for 20 carbon, alloy and stainless tubing steels. Applications mentioned are heat exchangers, condensers, boilers, conveying lines and structural or functional parts of processing equipment where temperature, pressure, sanitation, or corrosive environments are considerations. Bulletin TA 1559 is issued by The Babcock & Wilcox Tube Company, Dept. FP, Beaver Falls, Pa. When inquiring specify FP 2480 on handy form, pages 2 & 3.

Is Space an Important Factor?

Then Use This Distinguished Line of Close-Coupled Pumps

These GMC Pumps are ideal for a multitude of jobs. Smooth and efficient whether vertical, horizontal, up-side-down or any inclination. Low first cost, low power and maintenance costs. Top quality "by Aurora."
PUMPS "by Aurora"
Caps. 10 to 800 G.P.M.
Heads to 250 Ft.
Type GMC Aurora Close-Coupled Pump
Write TODAY for CONDENSED CATALOG "M"
DISTRIBUTORS IN PRINCIPAL CITIES
also BULLETIN 120

AURORA Always PUMPS — AURORA PUMP COMPANY

76 LOUCKS STREET **AURORA, ILLINOIS**

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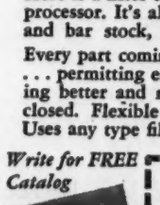
NOW...an *All* FABRICATED STAINLESS STEEL "SANITYPE" PRESSURE FILTER

for Bacteriological, Biological, Pharmaceutical, Chemical and Food Filtration

Here is a filter that's practically "made to order" for the food processor. It's all stainless steel, constructed entirely of plate and bar stock, with NO porous, pitted or rough surfaces. Every part coming in contact with liquid is HIGHLY POLISHED . . . permitting easy and thorough cleaning of the filter, assuring better and more positive filtration. Quickly opened and closed. Flexible for double filtration. No rubber washers. Uses any type filter pad, paper or cloth.

Write for FREE Catalog



F. R. HORMANN & CO., INC. Dept. FP-10
17 Stone St., Newark 4, N. J.

Yes, we'd like to have a copy of your catalog containing details on the SANITYPE filter.

NAME.....

COMPANY.....

ADDRESS.....

CITY.....ZONE.....STATE.....

When inquiring check FP 2482 on handy form, pgs. 2-3

Details dairy plant cleaning methods and agents

Sixteen-page, two-color booklet covers the general principles of dairy sanitation, the types of cleaning agents used, and ways of reducing sanitation labor. Specific cleaning procedures are given for all types of dairy equipment, including raw milk holding tanks, receiving vats, separators, lines and fittings for handling cool or warm milk, filter and strainer cloths, plant-type pasteurizers, vacuum pans, and cans and cases. Bottle washing, conveyor lubrication, maintenance of delivery trucks, and the farm cleaning of equipment are other items covered. Comparison tables show performance data between different type cleaning agents and lubricants. Flow sheet showing typical milk plant set-up is included. "Dairy Sanitation" is issued by The DuBois Company, Dept. FP, Cincinnati 3, Ohio. When inquiring specify FP 2483 on handy form, pages 2 and 3.

Catalog discusses alarms for combustion systems

Seven alarm systems for flame failure are outlined and discussed in 32-page catalog. Manufacturer makes specific recommendations for various types of oil- and gas-fired boilers. Auxiliary equipment is shown and specifications given. Catalog 9601 is issued by Minneapolis-Honeywell Regulator Co., Industrial Div., Dept. FP, Wayne and Windrim Aves., Philadelphia 44, Pa. When inquiring specify FP 2484 on handy form, pages 2 and 3.

How to maintain floors

Illustrated by numerous photographs, diagrams, and drawings, 12-page brochure presents a complete, effective, and economical program for the care of wood, concrete, terrazo, linoleum, tile, and similar floors. Points discussed in detail include wear resistance; appearance, sanitation, cleanliness, and light reflectance; the use of sealers and hardeners; burnishing, buffing, and waxing; and the painting of concrete floors on, above, or below grade.

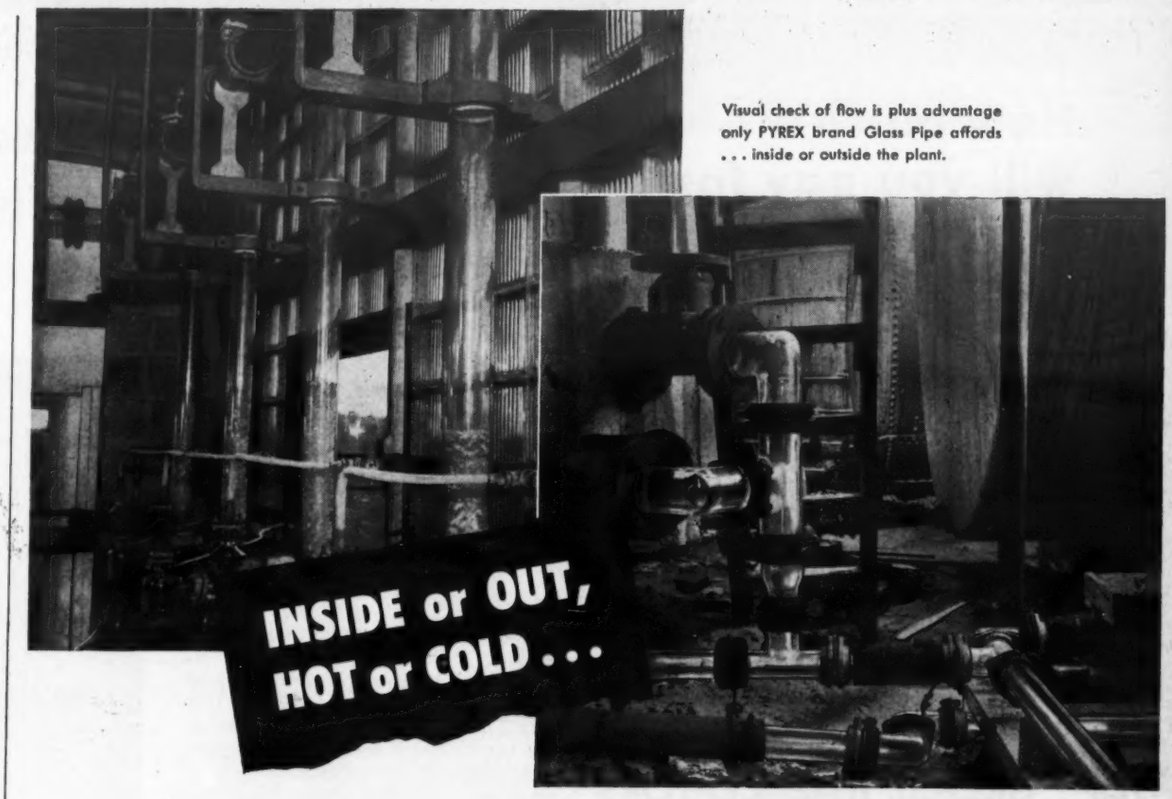
Brochure is printed in 2 colors. "Floor Maintenance" is issued by Tremco Manufacturing Company, Dept. FP, 8701 Kinsman Road, Cleveland 4, Ohio. When inquiring specify FP 2485 on handy form, pages 2 and 3.

Application data given on special purpose trucks

Five 3-color, single-page sheets give application data including dimensions, turning radius, capacity, lift, travel speed, and braking for five truck models.

Model KP, designed for use with pallets, features an adjustable link, large wheels, and easier steering. Models KN and KW are similar to the pallet truck, but are equipped with a platform for handling skids. Model KT is a mobile power unit without any lifting element. It is used as a tractor or pusher. Lift stacking is accomplished with a straddle type truck, model KHL. For semi-live platforms, manufacturer features a tongue lift truck having a capacity of 4000 lb lift with an 8000 lb trailing load. This is model KTL.

Issued by Lift Trucks, Inc., Dept. FP, 2425 Spring Grove Ave., Cincinnati 14, O. When inquiring specify FP 2486 on handy form, pages 2 and 3.



Visual check of flow is plus advantage only PYREX brand Glass Pipe affords . . . inside or outside the plant.

PYREX brand Glass Pipe *"Can Take It"*

If you believe that you must "baby" PYREX brand "DOUBLE-TOUGH" glass pipe, here are some facts that may surprise you. In use now for about 25 years, PYREX pipe has proved its dependability both inside and outside the plant (in all kinds of weather). The photographs above show typical installations . . . and this pipe has been in use for a long time.

Naturally, you can't throw glass pipe around or hit it with a hammer. But with reasonable care, it has always proved a profitable investment. PYREX brand glass pipe has a very low expansion coefficient. That's why it will take temperature shock . . . why it stands up in cold weather even with hot liquids flowing through it! And there is nothing better from the standpoint of corrosion resistance—it handles anything except hydrofluoric acid.

Physically strong to start with, PYREX brand glass pipe is now made with tempered ends—we call it "DOUBLE-TOUGH." The fittings, elbows, tees, reducers, crosses, etc., are also tempered. This treatment makes PYREX pipe better than ever before. With the current shortage of many corrosion-resistant materials, take a new look at PYREX Piping. It's available without priority and at reasonable cost. Corning's Piping Distributors can help you with layout and installation. Better get the full story. Use the coupon.

PYREX

CORNING GLASS WORKS

CORNING, NEW YORK

Corning means research in Glass

1851 • 100 YEARS OF MAKING GLASS BETTER AND MORE USEFUL • 1951

Technical Products Division: Laboratory Glassware, Signalware, Glass Pipe, Gauge Glasses, Lightingware, Optical Glass, Glass Components

CORNING GLASS WORKS, Dept. FP-10, Corning, N. Y.
Send me your new Pyrex brand Glass Pipe Catalog.

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

When inquiring check FP 2487 on handy form, pgs. 2-3

How much will you pay for GREASE this year?

Grease is worth money—and it is urgently needed! If you are not salvaging grease from the waste lines in your plant, the grease you are throwing away is costing you money!

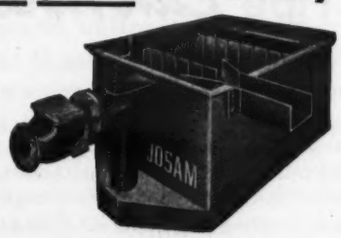
Josam Grease Interceptors are guaranteed to recover over 90% of the grease which you can easily sell at a profit. They prevent your drain lines from becoming clogged . . . thereby avoiding service interruptions and costly repairs. Modern food processing and packing plants everywhere are profiting from Josam Grease Interceptor service. Send coupon below for further details.

Josam GREASE INTERCEPTORS

turn waste grease into money!

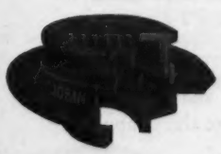
Series "PH" Grease Interceptor

All steel, designed for any capacity, with skimming valve and skimming trough for service in packing houses, rendering plants, abattoirs, and industrial plants. For installation on floor or in a pit.



FOR FLOORS IN PACKING PLANTS

SERIES 3610 LEVELEZE FLOOR DRAIN



The ideal drain to meet problems of new construction, alterations and maintenance. Adjustable collar of drain has a rolled thread which permits lowering or raising top to meet finished floor level, even after drain is installed. Pays for itself many times over.

JOSAM MANUFACTURING COMPANY

372 Josam Building — Cleveland 13, Ohio

Representatives in Principal Cities

Please send free copy

☐ Bulletin "G" on Grease Interception.

☐ Literature on Leveleze Drain.

Name .....

Firm .....

Address .....

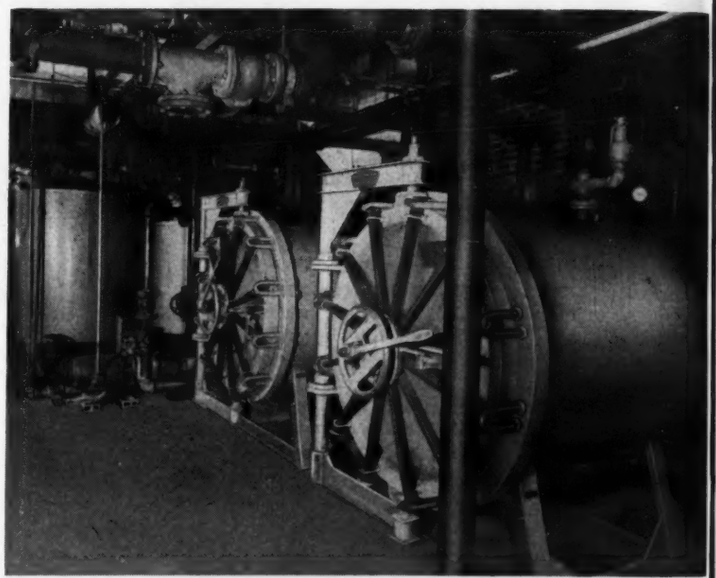
City and State .....

When inquiring check FP 2488 on handy form, pgs. 2-3

Sanitation & MAINTENANCE

Filtration with Filter Aid Removes Emulsified Oil from Condensate for Return to Boiler

E. W. Meyers, Chief Chemist of Hershey Chocolate Corporation, describes method of condensate treatment



Each of these filters can be expanded from 306 sq ft to 400 sq ft when additional capacity is required

PROBLEM: Large amounts of high and low pressure steam are utilized to operate processing equipment and steam driven pumps at Hershey Chocolate Corporation. Condensate is returned as boiler make-up water after removal of oil by filtration. If oil is not completely removed hot spots on boiler tubes may result.

An alum flocculation type of filter operation proved unsatisfactory. Slight deviations from the allowable pH range caused the floc to break and permitted oil as well as aluminum sulfate which under these conditions was in solution, to pass into the boiler. Also, a possibility of stream pollution was present during the back-washing operation.

Solution: Removal of the oil is now accomplished by passing the untreated condensate through diatomaceous earth filter material which acts both as a filter aid and an absorbent. After test runs on a demonstrator filter unit of ½ sq ft filter area proved satisfactory, two leaf filters were installed, each having 306 sq ft of filter area.

Each filter is prepared for operation by mixing the filter material with a portion of the condensate and recirculating through the screens of the filters until a filter bed is formed and a clear oil-free filtrate is obtained.

After the precoating has been completed, the rest of the condensate is run through the filter. A predetermined amount of the filter material is added continuously to the condensate to aid in the filtration and absorption of the oil.

Results: Emulsified oil from the processing operation is removed from the steam condensate without need for any pH control and without danger of polluting streams, caused by the back-washing operation when the alum flocculation type filter was used.

Source: Hercules Type 40 Leaf Filters were installed and are serviced by Hercules Filter Corp., Dept. FP, 204-21st Ave., Paterson, N. J. . . . or for more information check FP 2489 on handy form, pages 2 and 3.

Ultrasonics prevents formation of boiler scale . . .

wave-producing device keeps surfaces clean during 10-week test on 125 psi boiler

Problem: When The British Rubber Co. Ltd., Lachine, Quebec, purchased a new 180 hp, horizontal return fire tube boiler, it decided to investigate means of preventing the buildup of lime scale. This could well become a problem because the makeup water would average 20% or about 3000 gal per day. Boiler was to operate at 125 psi steam pressure, blowdown to be carried out daily.

Solution: Crustex, an ultransonic wave-producing apparatus for removing and preventing formation of solid limestone crust, was connected to the boiler. Device brings about impulses in the water in boiler.

After a 10-week test run, the boiler was opened for inspection. All tubes and walls of shell were found in excellent condition. At front end of boiler, resting on tube sheet, about 15 lb of loose scale flakes were found in a pile about 3" high by 1½' diam. Rest of the shell was free of mud or sludge.

At various spots, the thin scale was loosening up from

the metal sheet and could be easily washed off with running water. This scale was about 0.002" thick. It is believed that boiler scale built up on the hot surfaces until this thickness was reached, when scale loosened.

Scale had the following analysis: silicates (insoluble in aqua regia), 46.0%; iron oxides, 4.6%; sulfates, 24.4%; carbonates, 25.0%.

Throughout the trial, pH of water in boiler was found to average 9.5, as compared with 10.75 in one of the company's other boilers using chemical compounds.

Results: The 10-week test run at full capacity showed that the Crustex apparatus exhibited high efficiency in preventing serious buildup of scale. However, the ultrasonic method does not keep scale from forming entirely. As has been mentioned, the scale builds up to about 0.002" and then begins to flake off. Thus, a small amount of scale is almost always on the surfaces to prevent corrosion. The presence of only a low percentage of rust in the scale sample is proof of low corrosion present in the system.

The absence of mud or sludge on the fire sheet, as compared with relatively high sludge formation in boilers treated with chemical compounds, was striking. It is believed that a boiler using ultrasonic scale removal won't have to be washed as often as one using chemicals.

The British Rubber Co. Ltd., on the basis of the trial run, is of the opinion that this method of scale removal, as compared with chemical removal, will require less attention on the part of engineer or laboratory, and will probably have a lower maintenance cost.

Source: Crustex is made by Velan Engineering Company, Dept. FP, 1216 Drummond St., Montreal, Canada ... or for more information check FP 2490 on handy form, pages 2 and 3.

Masonry made water repellent without sealing pores . . .

silicone base liquid impervious to oxidation, prevents efflorescence, applies by brush or spray

Uses: Water repellent for uncoated exterior masonry walls. Recommended for use on brick, concrete, concrete block, stucco, stone, and marble surfaces. Effective on asbestos shingles, unglazed tile and masonry previously painted with water-mixed paints.

Features: Because of its silicone content it is unlike conventional waterproofing compounds — it doesn't close up masonry pores. Instead, it coats the pore walls with silicone and allows the masonry to breathe. It is impervious to oxidation and prevents unsightly efflorescence. Since it stops water from carrying stains into the masonry, dirt and grime remain on the surface where they can be washed off.

Description: "Monoseal" is a thin liquid that penetrates anywhere from 1/4 to 3/8" into the masonry surface. It is a transparent, colorless, silicone base compound that does not alter the surface appearance in any way. It applies by either brush or spray, and merely one coat is all that is required.

When applied over masonry joints, Monoseal seals out moisture and prevents disintegration caused by freezing water. It eliminates tuck-pointing, and keeps moisture out of stucco hairline cracks. It is especially recommended for use after sandblasting.

Source: Product of Dept. M-1 of The Monroe Company, Inc., Dept. FP, 10703 Quebec Ave., Cleveland 6, Ohio ... or for more information check FP 2491 on handy form, pages 2 and 3.

RIGHT IN YOUR OWN BACK YARD... BY WEST

JUST LET TITUS TWILLIGER, THE OFFICE PENNY PINCHER GET NEAR THOSE OLD-FASHIONED FOLDED TOWELS... AND THEN WATCH OUT FOR THE BLIZZARD.
AND THAT'S THE SKINFLINT WHO MAKES US SIGN FOR PAPER CLIPS!
AND THE WEST MAN TOLD HIM YESTERDAY HE COULD CUT PAPER TOWEL COSTS 40% WITH WESTROLL
SOME DAY I'M GONNA CLEAN UP HIM INSTEAD OF THE FLOOR!
HE'D BE WASHED UP FOR GOOD IF THE BOSS COULD ONLY SEE HIM!
HE GOES THROUGH TOWELS LIKE RABBITS THROUGH A LETTUCE PATCH!
BETTER GO WEST, OL' MAN, GO WEST!

Recognize the type? You'll find him everywhere. Wherever paper towel dispensers say, *"Help yourself, there's no limit to the use or abuse,"* of this necessary washroom service!

Paper towel costs can be reduced up to 40%. How? With WESTROLL Paper Towels and Dispensers.

WESTROLL Dispensers are designed to feed just enough toweling — *and no more!* For a thorough hand drying job. Yet, WESTROLL towel service is never miserly. A choice of 3 feed-speeds fits WESTROLL service to any type of washroom traffic.

WESTROLL Paper Towels are soft, absorbent, 'right' in wet strength. And 33⅓% more economical in regular use than interfold towels. Add to this initial saving, the extra uses found for 'easy-to-pilfer' towels; more frequent cabinet fillings; extra janitorial work. That's the real picture. As your WEST man can prove in a 10-minute demonstration.

WESTROLL Paper Towel Service is only one of many WEST products for the promotion of sanitation. Others include floor maintenance materials . . . washroom service . . . disinfectants . . . deodorants . . . insecticides . . . cleaners . . . soaps . . . protective creams. West is also the exclusive distributor of Kotex Sanitary Napkins sold through vending machines.

WEST DISINFECTING Company

42-16 West Street
Long Island City 1, N. Y.

START SAVING...

the day you install WESTROLL Towels and Dispensers!

How about a WESTROLL demonstration?

Name_____ Title_____

Company_____

Address_____

City_____ Zone_____ State_____

Dept. 9

When inquiring check FP 2492 on handy form, pgs. 2-3

How to make your equipment last longer

Kettle

Blancher

Bread Pans

Retort

ONE important step in any program designed to preserve the life of costly equipment is to use specialized Oakite cleaning materials and methods—job tested for safety—on even the most sensitive metals.

Use safe Oakite materials day in and day out for quick removal of food soils and stains, lime scale, rust, milkstone—without abraiding or etching sensitive metal surfaces. Use them for cleaning baking tins without damaging the burned-in finish. Degrease and derust meat trolleys, 500 at a time, without harmful tumbling. Descale heat exchangers chemically and eliminate dangerous rodding. You'll do these and hundreds of other important cleaning jobs . . . over and over again . . . safely. You'll get greater production, more mileage out of your equipment.

There's a carefully compounded Oakite material and method for every cleaning job. Your local Oakite Technical Service Representative will gladly show you how they work. Call him today. Or write for booklet, "Cleaning in the Food Industry". FREE!

OAKITE PRODUCTS, INC., 27A Thames St., NEW YORK 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING

OAKITE

MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. & Canada

When inquiring check FP 2493 on handy form, pgs. 2-3

SANITATION & MAINTENANCE

Indoor-outdoor vacuum cleans warehouses, parking lots, etc . . .

creates no dust clouds; picks up fine dust, paper, nails, sand

Uses: Indoor-outdoor vacuum sweeper for picking up everything from fine dust to nails.

For leaves, paper, sand, metal chips and other refuse on all types of surfaces.

Features: Various models incorporate features such as roller guides which prevent damage to walls while sweeping close; a foot pedal which raises sweeper to pick up larger objects; easily-emptied hopper; etc.

Creates no annoying dust clouds: vacuums as it sweeps. Ease and efficiency of operation encourages frequent use.

Description: Typical sweeping-widths include 36 or 48", and in excess of 54" with curb brush attachment. Operator sits or walks, depending on model.

Source: Wilshire Power Sweeper Co., Dept. FP, 4615 Alger St., Los Angeles 39, Calif. . . or for more information check FP 2494 on handy form, pages 2 and 3.

Dust cups on punches of tableting machines catch oil . . .

also keep dust from puffing up at point of compression

Uses: Attached to each upper punch of rotary tableting machine, cups catch running oil or grease on punch shank and keep it from falling into granulation. Also prevent dust from puffing up from point of compression and gathering on lower shank or keyway where it would dry the lubricant on the shank.

Features: Maintenance is reduced and lubrication is required less frequently because lubricant can be used more freely. Cleaning of the cups is required only once or twice weekly.

Replacement of cups is unnecessary as neoprene is not affected adversely by oil or grease.

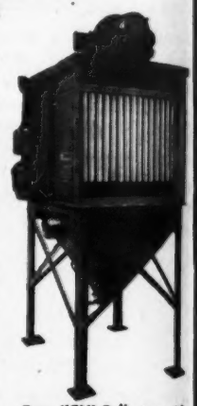
Description: In installation of neoprene dust cups, holes are punched in the centers of the cups by placing them over a die and rotating the machine by hand.

Source: Dust cups are available from F. J. Stokes Machine Co., Dept. FP, Philadelphia 20, Pa. . . . or for more information check FP 2495 on handy form, pages 2 and 3.

STOP DUST AT ITS SOURCE

. . . with Pangborn Unit Dust Collectors

If concentrated dust hampers your production, install this Pangborn "CL" industrial type Unit Dust Collector right at the source of dust! It's delivered factory assembled, ready to use. Has non-sag, individually removable screen frames, motor-driven screen shaker—all-metal construction (except filter cloths). Models available with cloth area from 180 to 820 sq. ft. *Write for Bulletin* 912 *to*: PANGBORN CORPORATION, 2900 Pangborn Blvd., Hagerstown, Maryland.



Type "CL" Collector with side removed, showing bank of screens.

Look to Pangborn for the latest developments in Dust Control and Blast Cleaning equipment.

Pangborn

DUST CONTROL

stops the dust hog from stealing profits

When inquiring check FP 2496 on handy form, pgs. 2-3

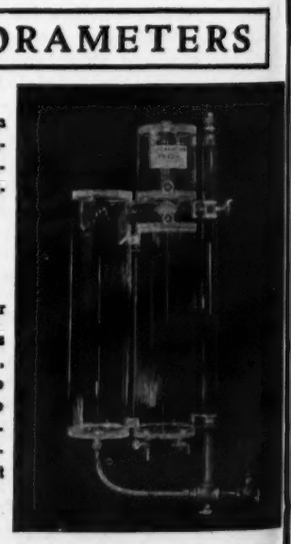
Chlorinate— THE SIMPLE WAY!

WITH CHLORAMETERS

Thanks to simple design and non-corrosive construction the CHLORAMETER eliminates headaches in treating

- **Plant Water**
- **Cooler Water**
- **Process Water**
- **Any Dubious Water**

The CHLORAMETER has only one moving part . . . is easy to install, simple to operate . . . uses one simple adjustment to insure ACCURATE PROPORTIONAL FEED at any practical dosage.



BENTON PRODUCTS, Inc.

(Dep't. J)

175 Orawaupum Street **White Plains, N. Y.**

When inquiring check FP 2497 on handy form, pgs. 2-3

Aqueous solutions of cleansers act like organic solvents as well as soaps . . .

over-sized molecule groups dissolve organics which would not usually yield to water

Uses: Tests have indicated usefulness in metal cleaning, types of in-process cleaning, maintenance cleaning and other applications where soaps, alkaline cleansers or emulsions fail.

Features: Action of cleansers is based on over-sized groups of molecules which have the property of dissolving not only water soluble soils taken up by normal soap solutions but also water insoluble soils which are normally taken up only by organic solvents. The material has little saponifying power, however, and does not remove fatty soils by this mechanism.

Description: Four of these materials, called Solubilizing Cleaners, are in semi-commercial production and more are being developed. They are clear liquid, yellow, dark brown or cherry red in color. While only limited clinical tests have been run, results indicate a reduction of dermatitis hazard, due to defatting, over conventional material. Vapor toxicity is about the same as that for conventional materials. Other properties include: practically neutral pH, good solubility and dispersibility in water, moderately high flash point, and a high adsorption at interfaces.

Research has indicated that type SC-3 may be particularly useful as a hand cleaner. It has been effective on grime, paint, tar and printing ink. Another type has shown good possibilities in removing imbedded buffing compound in the designs on buffed silver. Research is now focusing on food processing, laundry and dry cleaning.

More detailed information on the four types now in production is available from manufacturer.

Source: Development of Pennsylvania Salt Mfg. Co., Dept. FP, 1000 Widener Building, Phildelphia 7, Pa. ... or for more information check FP 2498 on handy form, pages 2 and 3.

Here's a corrosion-proof cement that sets hard in contact with concrete, metals . . .

resistant to alkalis, acids, solvents, also to greases

Uses: Corrosion-resistant cement for joining brick, tile, concrete, glass, and various metals. Lining tanks, covering floors, etc., are specific applications.

Features: Sets hard in contact with concrete or metals — distinguishing it from conventional corrosion-resistant cements, maker reports. Cement is resistant to acids, alkalis, solvents, and grease.

Description: Alfane mortar is prepared by adding approximately ½ pint of Alfane Catalyst to 1 gallon of Alfane Mixture. Ratio may be varied somewhat depending upon the temperature and the desired working time. Working time can be increased by reducing amount of catalyst and by lowering temperature.

Formulation yields a working life about 40 minutes at 75°F; sets hard in 24 hours. Mortar must be used while it is still in a trowelable state.

Source: Product of the Atlas Mineral Products Company, Dept. FP, Mertztown, Pa. . . . or for more information check FP 2499 on handy form, pages 2 and 3.

Here are 7 big reasons why

Dowfume EB-15

is "Tops" for food machinery and spot fumigation

1. Highly effective against all common pests of food processing establishments.
2. Low volatility.
3. Nonflammable.
4. Has a warning odor as a safety factor.
5. Economical.
6. Time-saving—easy to apply without special equipment.
7. Residual effect delays reinfestation of stock.

There are *many* reasons why Dowfume EB-15 is indispensable to all-around effectiveness in food plant sanitation. Seven are given here—and, with use, you will discover other worthwhile advantages of this outstanding fumigant material.

Spot fumigation with Dowfume EB-15 at monthly intervals, or as needed, between general space fumigations with Dow Methyl Bromide offers a double safeguard against early reinfestation. This low-volatile liquid fumigant is ideal for treating machines which handle products susceptible to infestation and which are apt to have dead stock accumulations in corners, cracks and crevices. When machines are made sufficiently tight to retain vapors, Dowfume EB-15 can remain effective in dead stock as long as 30 days after application.

Your local PCO can do a speedy, thorough job with this economical Dow fumigant. We will gladly furnish his name on request. Write our Fumigant Department.

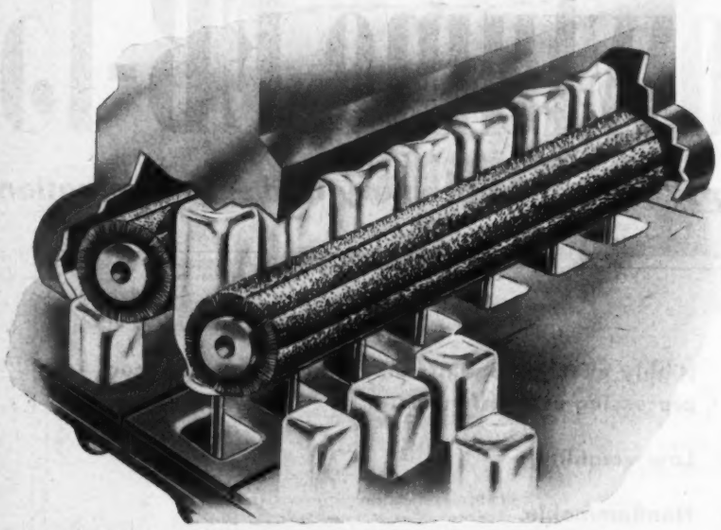
When you use fumigants . . . insist upon
DOW QUALITY
Dow Methyl Bromide • Dowfume EB-15
Dowfume EB-5 • Dowfume MC-2
Dowfume 75 • Picride

DOW
CHEMICALS
INDISPENSABLE TO INDUSTRY AND AGRICULTURE

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN
New York • Boston • Philadelphia • Washington • Atlanta • Cleveland • Detroit
Chicago • St. Louis • Houston • San Francisco • Los Angeles • Seattle
Dow Chemical of Canada, Limited, Toronto, Canada

When inquiring check FP 2500 on handy form, pgs. 2-3

No Time Lost — REPLACING BRUSHES



Philadelphia Dairy Washes 7200 Bottles per Hour per Machine with FULLERGRIPT BRUSHES

At Abbotts Dairies in Philadelphia, changing brush rolls on a bottle washing machine was a time-consuming operation. It meant opening the bearings and re-aligning a new brush in the bearings. This job could not be accomplished between shifts — consequently, the productive operating time of the machine was cut down.

In 1938 Fullergript brushes were installed. The "lost time" problem was immediately "licked". When replacements are necessary Fullergript strips can be quickly installed between washing runs. The bearings are not touched. Abbotts Dairies has five bottle washing machines in its Philadelphia plants, and each machine is capable of washing 7200 bottles per hour.

Fullergript power brushes are resulting in production economies in many branches of the food industry. For ideas on how Fullergript can help you, send for FREE booklet, "Fullergript Power Brushes". Just write to . . .

FULLER BRUSH FULLERGRIPT

At home...in business, too

THE FULLER BRUSH CO.
INDUSTRIAL DIVISION
3641 MAIN STREET • HARTFORD 2, CONNECTICUT

When inquiring check FP 2501 on handy form, pgs. 2-3

SANITATION & MAINTENANCE

Simple design featured in chlorination unit for small system . . .

inexpensive installation requires no technician or engineer

Uses: Handles water chlorination in small potable water plants, industrial waste and sewage, cooling water (where algae control is a problem), sanitizing bottle washing equipment, canneries, and other places where sterilization by chlorination is indicated.

Features: Unit may be easily and quickly installed and does not require the attention of engineers or technical personnel in operation. Its initial cost is less than that of alternate equipment.

Description: Hypochlorinator takes water from a high pressure point in the system at a rate controlled by a needle valve and indicated by a flowmeter. This water is injected into a tablet bed where the chlorine solution is formed. Solution is then returned to a low pressure point in the flow system. Since the body of the tablet bed container is of clear plastic, the operator can tell at a glance when refilling is necessary.

Tablets used in the bed are HTH (high test calcium hypochlorite) and contain 70% available chlorine. Used in this system, they form no insoluble sludge. Each tablet is ¾" diam and about ¼" thick, weighing approximately 1/6 oz. Tablets are of uniform composition and contain no filler or binder. Each tablet is equivalent to one teaspoon full of granular hypochlorite.

Plastic container is 17" high and 8" in diameter. This size container allows a slow steady release of up to 6 pounds of chlorine from one fill.

Source: HTH tablets and the plastic tablet bed container are available from Mathieson Chemical Corporation, Dept. FP, Mathieson Building, Baltimore 3, Md. . . . or for more information check FP 2502 on handy form, pages 2 and 3.

How to repair floors more quickly

Two-color folder tells how to repair broken concrete floors in three steps.

It is reported that 50,000 lb loads can be handled one minute after repairs are made. Form 120-11 is issued by The Monroe Company, Inc., Dept. FP, 10703 Quebec Ave., Cleveland 6, Ohio. When inquiring specify FP 2503 on handy form, pages 2 and 3.

SAVE MANPOWER and CUT COSTS on every cleaning job with

cold steam

no back splash!
blasts stubborn dirt!
harmless to finest finish!

Connects to regular air and hot or cold water outlets.

HYDRO-AIR PRESSURE WASHER $9.95

PRESSURE CLEANS . . . Tanks, Blenders, Mixers, Cookers, Racks, Separators, Homogenizers, Pasteurizing Equipment, Air Filters, Dry Feeders, Bag Fillers, Trucks and other equipment.

ORDER THROUGH YOUR SUPPLIER OR DIRECT

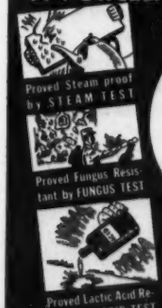
D & M PRODUCTS, INC.
30 North Raymond Avenue • Pasadena 1, California

When inquiring check FP 2504 on handy form, pgs. 2-3

LIQUID PORCELAIN-LIKE DAMP-TEX FOR

WET OR DRY SURFACES

GIVES YOUR WALLS AND EQUIPMENT A PORCELAIN-LIKE FINISH OVERNIGHT



Damp-Tex sticks to wet or dry wood, metal, concrete, plaster. Stops deterioration, rust, rot, bacterial and fungus growth*. Will not crack, peel, check, sag or fade. Comes in non-yellowing white and colors. One coat covers. Dries over-night into porcelain-like waterproof film. Will not taint foods.

*Pre-Treated Damp-Tex

SEND FOR DETAILS OF OUR NO-RISK TRIAL OFFER. Your first Damp-Tex is used entirely at our risk. Send for folder (K) for complete details.

DAMP-TEX
THE WET-SURFACE ENAMEL

STEELCOTE MFG. CO. ST. LOUIS, MO.

Canadian Manufacturer: Standard Paint & Varnish Co., Windsor, Canada
Canadian Industrial Distributor: G. H. Wood & Co., Ltd., Toronto

When inquiring check FP 2505 on handy form, pgs. 2-3

Attach mobile steam cleaner to plant lines . . .

compact, mobile unit cleans and sterilizes equipment

Uses: For use in steam cleaning operations where it is desired to utilize steam from plant lines. Cleans equipment, plant premises and facilities.

Features: Rapid cleaning and substantial savings in use of solvents and detergents since there is no dilution by large volumes of water. Also, in this system of steam-jet cleaning, solvent, detergent or paint stripper can be applied either alone or mixed with steam in any desired proportion.

Description: Cleaner unit includes a high pressure detergent tank mounted on a lightweight all-metal dolly with rubber tired 10" wheels and handle bar grips for easy mobility. It is built under ASME code, has 200 psi safety valve and all other necessary control valves. It carries National Board Stamping and Insurance Company Certificate.

Detergent tank is thoroughly insulated and enclosed in an enameled case. In operation, tank is filled with detergent or solvent, and steam is admitted in the top of the tank to put the liquid under pressure. Detergent flows from the bottom of the tank through the detergent hose to the steam lance. There it is atomized with the steam and directed with jet velocity under finger tip control.

Desirable operating steam pressures are in excess of 80 psi. Lower steam pressures can be used but are less effective.

Source: Speedyjet cleaner is built by Livingstone Engineering Co., Dept. FP, Worcester, Mass. . . . or for more information check FP 2506 on handy form, pages 2 and 3.

Engineering of floors explained

Two-color, 12-page booklet explains factors and methods of floor engineering. Mechanical, thermal and chemical needs are examined in order to find solutions which apply to specific conditions. "Why Engineer A Floor?" is issued by Flash-Stone Company, Inc., Dept. FP, Philadelphia 44, Pa. . . . or for more information check FP 2507 on handy form, pages 2 and 3.

For more information on product at right specify FP 2508 . . . see information request blank between pages 2-3.

Here's SECURITY AGAINST OVERPRESSURE

Put BS&B SAFETY HEADS to work in your plant and you can forget the danger of overpressure. Here's why:

A SAFETY HEAD is simply two flanges with a rupture disc between. It's the disc that does the job . . . an engineered "weak spot" in your pressure system that bursts before your vessels do. It gives instant, pipe-size relief, and the hazard is over.

There's a SAFETY HEAD for your pressure problems . . . with or without safety valves, for corrosive viscous or super-heated materials. Put the question to our SAFETY HEAD engineers. They'll be glad to serve you. Write or wire today!

BLACK, SIVALLS & BRYSON, INC.
Adv. Dept. Rm. 28W 7502 East 12th Street
Kansas City 3, Missouri

SAFETY HEADS for Positive Pressure Protection

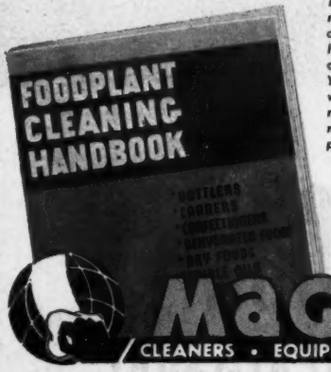
2

You Can Save
¾ of the Time . . . ⅔ of the Cleaner When Cleaning Your Smoke Houses!

The job of cleaning smoke houses is a messy one in many plants . . . with caustic fumes spreading beyond the smoke house area, the consumption of a lot of relatively expensive caustic soda, and only moderately good results after all the trouble!

With the Magnus Method of smoke house cleaning you use a fume-free, non-hazardous cleaner. One barrel goes further than three barrels of caustic. The job is done a great deal better than with caustic . . . and in one-quarter of the time. The rest of the plant is unaffected during the cleaning operation, so there are no production losses to chalk up.

WRITE FOR THIS CLEANING MANUAL

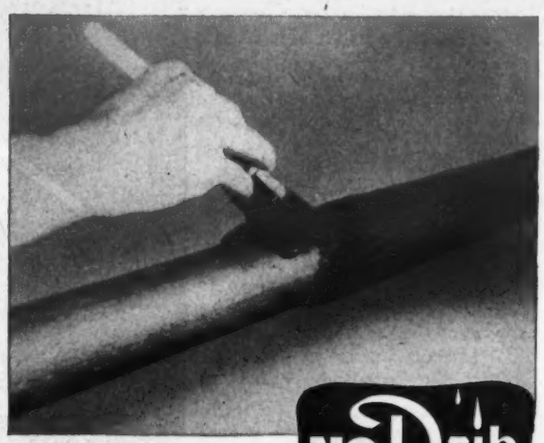


It covers not only a great many more meat processing cleaning problems, but hundreds of other cleaning operations in food plants. You're sure to get worthwhile ideas on better and more economical cleaning methods for your own process from this handbook

MAGNUS CHEMICAL CO., 173 South Ave., Garwood, N. J. In Canada—Magnus Chemicals, Ltd., Montreal. Service representatives in principal cities.

Magnus
CLEANERS • EQUIPMENT • METHODS

When inquiring check FP 2509 on handy form, pgs. 2-3



COVER PIPES TANKS, WALLS

NoDrip

Anyone can brush, trowel or spray NoDrip on any clean, dry surface. Goes on like plaster, forms a seamless, protective coating. *Stops condensation drip!*

NoDrip keeps equipment and floors safe and dry; prevents corrosion of metal and prolongs its life. Acid, alkali and brine resistant. Comes in 1, 5, and 55 gal. drums, ready for use.

TRY NoDRIP

Apply NoDrip to a small area, compare the results with uncovered portions.

Send for free NoDrip Handbook

J. W. MORTELL CO., 532 Burch St., Kankakee, Ill.

When inquiring check FP 2510 on handy form, pgs. 2-3

Up to 6 persons can wash simultaneously at a 36-inch circular Bradley. Note foot-control. Hands touch no contaminating surfaces, faucets, etc. Installation pictured at Swift's Canadian Co., Toronto.

Where Food Products Are Processed Foot-Control WASHFOUNTAINS
Meet Sanitary Requirements

U. S. Dept. of Agriculture "Requirements for Health and Hygiene of Personnel," regulation (IV) says, "The water supply in all hand washing facilities shall be operated by foot-pedal or knee-control or be of the continuous flow type."

Prominent Users Include

Armour & Co.
Swift & Co.
Wilson & Co.
Borden Creamery
Brach's Candy Co.
Campbell Soup Co.
Continental Baking
H. J. Heinz Co.
Florida Citrus Growers Assn.
Quality Ice Cream
Kroger
Canada Dry
H & H Poultry Co.
Dorecrest Poultry Co.
National Cold Storage Co.
Somerville Packing Co.
Birds Eye Frozen Foods

No Faucets on Bradleys • *Foot-Control Provided*

With Bradleys, hands touch nothing but the cleansing spray of running water provided by the sprayhead. No faucets to touch or maintain . . . Also the self-flushing bowls of Bradleys prevent collection of contaminating water.

Item (3) of the regulation says—"Every person after each use of toilet or change of garments shall wash his hands thoroughly before returning to duties that require the handling of dressed poultry or edible products, or containers thereof, or edible products handling equipment."

Bradley Washfountains also provide for greater facilities in less space—cut piping connections by 70% and reduce water consumption up to 80%. . . . BRADLEY WASHFOUNTAIN CO., 2267 W. Michigan Street, Milwaukee 1, Wisconsin.

Send for illustrated Catalog 4701

BRADLEY Washfountains

Distributed Through Plumbing Wholesalers

The Bradley sanitary DUO is a two-person Washfountain with foot-pedal control for smaller washrooms.

When inquiring check FP 2511 on handy form, pgs. 2-3

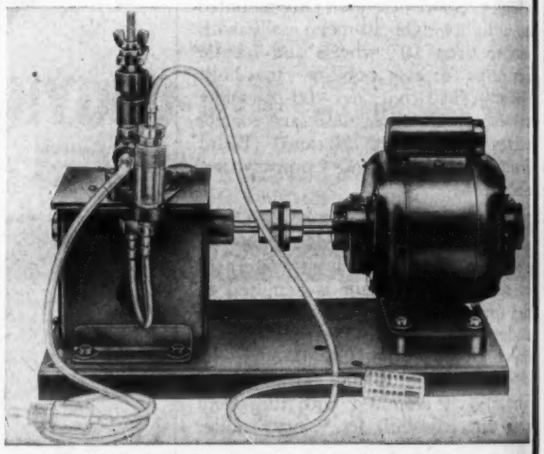
Chlorination of water supply simplified by compact non-clog feeder . . .

adjusts accurately from zero to full speed; valves are self-cleaning; exceptionally compact

Uses: For use in chlorinating water and sewage systems.

Features: Furnished complete and easy to install and service. Only additional requirement is crock for chemical supply. Full control provides for accurate adjustment over full-range. Non-clogging operation. Valves in feeder are cone-point type with spiral grooves through which liquid passes; grooves cause spiral movement of valves when off of seat, thus making them self-cleaning. Adjustments may be made while device is running.

Description: Standard unit with ⅜" plunger has capacity of 5.5 pints per hour at 35 strokes per minute.



Complete chlorinator unit is easily installed

Special unit has ½" plunger and capacity of 10.5 pints per hour at 35 strokes per minute. Durable, tested materials are used in construction. Cylinder FA20 steel; plunger is Hastelloy; valves are Carpenter #20 steel. Feed is regulated by shortening or lengthening stroke of pump plunger, stroke being changed by means of regulating nut. Packing is Teflon and of chevron type. Intake of suction valve is on bottom of pump cylinder, connected to bottom of plastic sight feed by plastic tubing.

Source: Hypochlorinator is made by Manzel Brothers Company, Dept. FP, 315 Babcock St., Buffalo 10, N. Y. . . . or for more information check FP 2512 on handy form, pages 2 and 3.

Aluminum now welded without objectionable dark weld . . .

aluminum rod with silicone-free flux gives weld that closely matches physical properties of base metal

Uses: Flux-coated aluminum welding rod for oxy-acetylene and oxy-hydrogen welding of aluminum — especially pure aluminum (2S).

Features: Physical properties of the weld such as color and corrosion resistance are reported to closely match those of the base metal. Special silicon-free flux eliminates the objectionable dark weld that has generally resulted from former use of anodized silicon-bearing

welding rods. In addition, the flux has a tendency to hold the metal and prevent it from 'running away' — particularly helpful when welding parts in position.

Description: Flux coating on EutecRod 22FC is low-melting for minimum heat application. Once melted, the flux flows in a transparent pool allowing the welder to watch the progress of his work. 22FC is made in 1/8 and 3/16" diameter.

Source: Development of Eutectic Welding Alloys Corporation, Dept. FP, 172nd St. & Northern Blvd., Flushing, New York, N. Y. . . . or for more information check FP 2513 on handy form, pages 2 and 3.

Damaged galvanizing restored to strength of hot dip . . .

wire solder makes homogenous coat; has great fluidity

Uses: Restores damaged galvanizing. Effective on underground connections, refrigerators, etc.

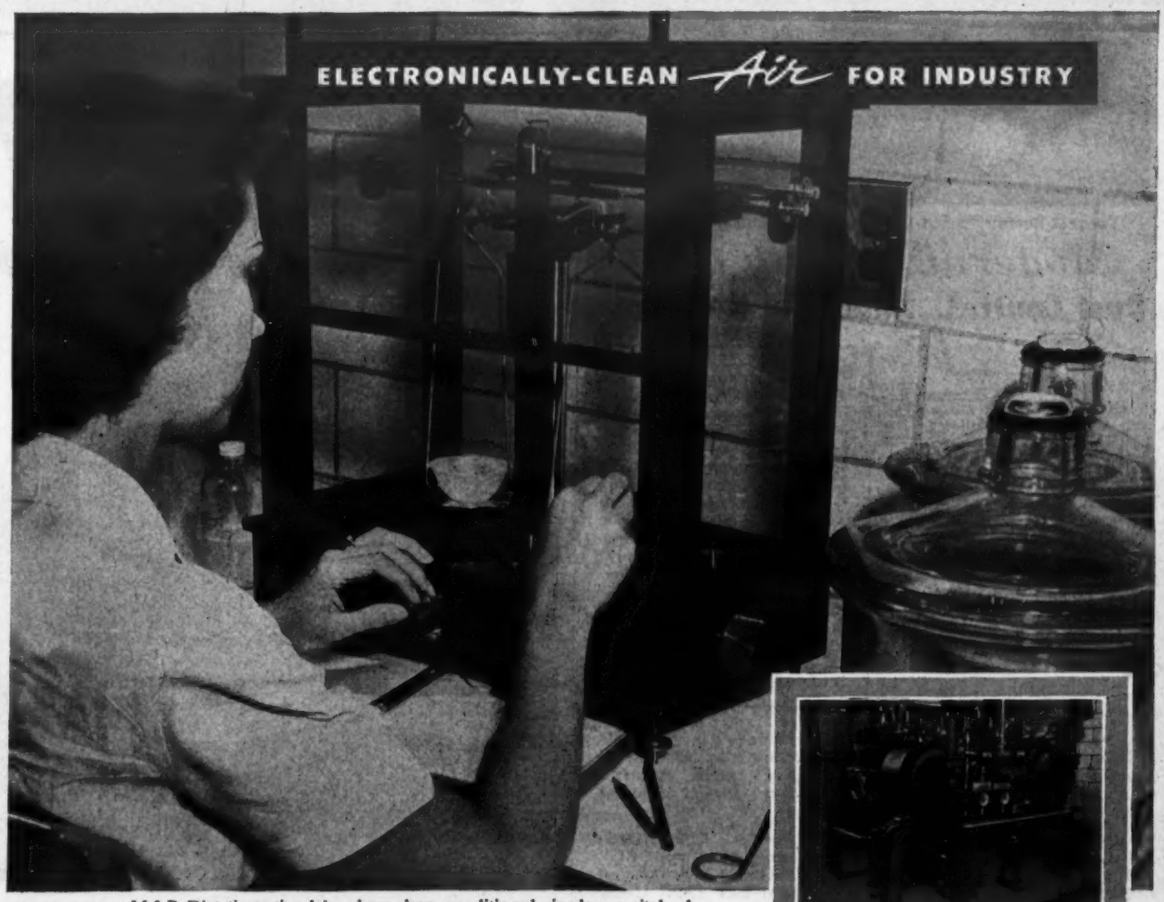
Features: Particularly effective in soldering on galvanizing destroyed by welding. It is said that this solder withstands salt spray bath without deterioration in tests of

Galvanizing solder applied with torch or iron

exposure of 800 hours. No line of demarcation is shown between this solder and hot dip job. Amalgamates readily with hot dipped galvanizing.

Description: This solder has a melting point of only 17°F higher than 50/50 and has a very high degree of fluidity. It may be applied successfully with torch or soldering iron and may be used with either maker's ASMC all-metal or "Mayolite" flux on steel, iron, brass, etc.

Source: Farco galvanizing wire solder is made by Farrelloy Co., Dept. FP, 1260 North 26th St., Philadelphia, Pa. . . . or for more information check FP 2514 on handy form, pages 2 and 3.



M & R Dietetic testing lab, where clean, conditioned air plays a vital role.

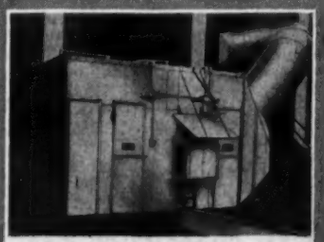
HOW **SUPER-CLEAN AIR**
GUARDS QUALITY AND PRODUCTION

Manufacture of baby foods requires exceptional standards of cleanliness. Every vessel must be sterile—and the air itself pure. M & R Dietetic Laboratories, makers of CEREVIM baby cereal and SIMILAC powdered infant food, insisted on *really clean* air. So PRECIPITRON®—the *electronic* air cleaner—was installed. Now they remove harmful contaminants so small that they can be seen only with the finest Ultra Microscope.

PRECIPITRON also increases production. In one separating process, 20% of the dried milk was once discarded because air-borne contaminants passed through mechanical air filters. Now 100% is useable, and is better graded too. In the testing lab, precisely-controlled humidity and temperature help improve product uniformity and increase the efficiency of the technical staff.

There's a complete line of Westinghouse equipment to help you *put air to work*—with electronic air cleaning, air handling, or air conditioning. Contact your local Westinghouse-Sturtevant office, or write Westinghouse Electric Corporation, Sturtevant Division, Hyde Park, Boston 36, Massachusetts.

Westinghouse Hermetically-Sealed air conditioning compressors can be installed in an unventilated space.



PRECIPITRON stops dirt *before* it enters the building. Its efficiency is triple the best mechanical cleaner.

There's nothing to remove from PRECIPITRON but dirt. It's periodically washed down drain with a water hose.

YOU CAN BE SURE...IF IT'S
Westinghouse

J-80229

When inquiring check FP 2515 on handy form, pgs. 2-3

"Largest Ready-To-Eat-Cereal Company in the World"

Modernizes with **DAY**

Dust Control...Material Handling

From a small one-room corn flakes plant, operated by W. K. Kellogg, soon after the turn of the century, has sprung the Kellogg world wide ready-to-eat-cereal enterprise with plants in Battle Creek, Michigan; Omaha, Nebraska; Canada; Great Britain; Australia; South Africa and Mexico. Today, the Kellogg Company manufactures nearly a dozen different ready-to-eat-cereals, and in addition, dog, poultry and stock feeds. Kellogg products are known and distributed throughout the world, and the company has become known as the "Largest Ready-To-Eat-Cereal Company in the World."

In a recent modernization program at Kellogg's large Battle Creek, Michigan plant the **DAY** Company was selected to engineer, manufacture and install dust control, material handling and storage equipment. The total project included the following:

DUST CONTROL FOR CORN AND WHEAT CLEANING: A turn-key job which included self-cleaning **DAY** Type "AC" Dust Filters with proven dust collection efficiencies of 99.99% and better; the widely accepted **DAY** Dual Clone Dust Separators which assure maximum centrifugal dust separation, and **DAY** Exhausters designed for highest efficiency in dust control applications.

MATERIAL HANDLING: **DAY** self-cleaning Pneumatic Conveyor system was installed for fast, dust-free grits conveying.

CEREAL STORAGE: For use in the storage of Rice Krispies, **DAY** fire and vermin proof, non-bridging bulk storage bins were supplied. These bins are furnished in either heavy, galvanized black iron or stainless steel.

LEADING COMPANIES RELY ON DAY

Records show that most of the nation's leading millers and many food processors depend upon **DAY**. According to a national survey, **DAY** dust control equipment is the predominant choice, with **DAY** leading its nearest competitor in this field of dust control by a margin of 10 to 1.

DAY EXPERIENCE CAN SOLVE YOUR DUST CONTROL PROBLEMS

This achievement record, plus the experience gained by The **DAY** Company in engineering, manufacturing and installing dust control systems for mills, elevators, food plants since 1881 is of great importance to you. It means that when you call upon **DAY**, you benefit from their 70 years' experience. No other dust control manufacturer can even approach **DAY**'s accumulated knowledge in this specialized field. Regardless of your dust problem, **DAY** can provide an effective and economical solution. For engineering assistance and cost estimates, Write-to-**DAY**!

DAY SINCE 1881 — *The* **DAY** *Company*

852 Third Ave. N. E., Minneapolis 13, Minn.
IN CANADA: P.O. Box 70, Fort William, Ontario
Branch Plants in Fort Worth, Buffalo and Welland, Ont.

When inquiring check FP 2516 on handy form, pgs. 2-3

Using plastic boards to cut meat at Ottumwa, Iowa, plant of John Morrell and Co.

Plastic Outwears Wood for Cutting Boards, Checks Knife Dulling, Improves Sanitation

Test reveals plastic board lasts 12 months, whereas standard wood boards were replaced every 3 months

USES: A plastic board for cutting, trimming and boning meats and other foods.

Features: In tests several plastic boards have been in use for a year while maple, the standard wood used for cutting blocks, has been replaced every three months. Indications from other tests show plastic will wear ten times longer than maple in pork boning operations.

Steaming is not necessary to clean the boards. They are non-porous, don't get "sour" or harbor bacteria. Plastic boards do not dull knives. They have no grain and there is no danger from splintering and gouging. Meat slides much easier on plastic than on maple.

Description: Uscolite cutting boards are made by combining a thermoplastic material with buna-N synthetic rubber and have a clean sanitary appearance.

Boards come in thickness of ½, ¾ and 1 inch with sizes ranging up to 42 sq ft. They are readily resurfaced by sanding or planing.

The USDA Meat Inspection Division has approved the board.

Source: "Uscolite" U.S. Royal Meat Cutting Board is sold through the United States Rubber Co., Dept. FP, Mechanical Goods Division, 1 Market St., Passaic, N.J. . . . or for more information check FP 2517 on handy form, pages 2 and 3.

Constant weight feeding governed by unique feed gate control . . .

movable wedge transmits proper amount of power for constant feeding without inertia

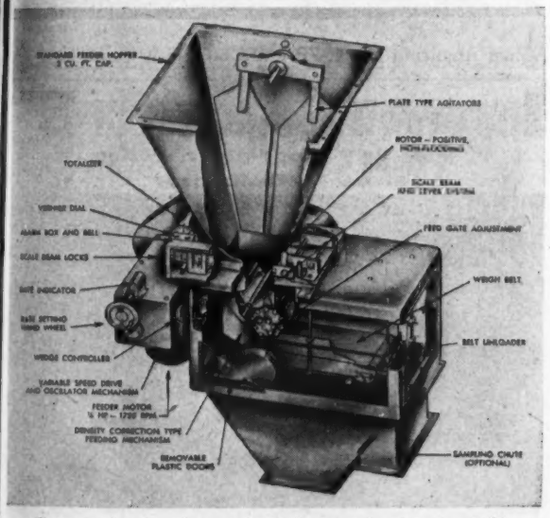
Uses: For constant weight feeding of granular or free flowing materials as, for example, in a continuous process.

Features: Combined rotary and vibrating feeding mechanism gives an accurate rate of delivery and reduces the tendency for over-and-under operation.

Description: The Chemizer chemical feeder consists of a hopper, feed mechanism and weighing belt. As material is deposited on the belt it is constantly weighed by a simple beam scale having the whole of the belt section on one end balanced against sliding weights on the other. Rate is maintained by changing the amount of feed from the hopper so that when the weight of material on the belt is low, feed is increased.

This mode of operation normally tends to result in a constant oscillation of the feeder between over and under feeding. A novel feature of the Chemizer, however, tends to reduce this tendency and give a more constant rate. The main bulk of the feed is maintained by a rotary hopper valve. But control of the flow rate is accomplished by a vibrating flap which changes the clearance of this valve with the hopper outlet. As vibration amplitude increases, so does the feed.

In order to link the vibrating flap to feed rate demand without incurring inertia — which would also tend to make for oscillating operation — a gap is left between the vibrating armature and the flap member. A rubber wedge which



Cutaway drawing shows principal parts of constant weight feeder

is linked to the balance beam hangs in this gap. When more feed is called for, the wedge is lowered into the gap. This increases the displacement of the flap and the amplitude of its vibration.

The model shown in this illustration handles from 5 to 5000 lb/hr of filter alum. Its capacity varies somewhat with the material being fed. A ¼ hp motor connected to the belt through a variable speed transmission is the means of control. Five-figure register indicates the amount fed and an over and under alarm are standard equipment.

Source: The Chemizer is a development of Omega Machine Company, Dept. FP, P.O. Box 1342, Providence, R. I. . . . or for more information check FP 2518 on handy form, pages 2 and 3.

Here is *Exactly WHY* a V-Belt with CONCAVE SIDES Gives You *Longer Wear!*

To see for yourself how a V-Belt that has *concave sides* is certain to give longer wear, just make this simple test:—

Pick up any V-Belt you have at hand. Bend that belt as it bends around a pulley. As it bends, grip its sides between your fingers. Here is what will happen *everytime*.

If the V-Belt you are testing has *straight sides*, you can feel those sides *bulge out* as the belt bends. This out-bulge forces the sides of the belt to press *unevenly* against the V-Pulley and you naturally get *concentrated* wear just where the bulge is greatest—as shown in figure 1-A, at right.

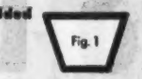
Now, make this same test with the belt that is built with *Concave Sides*—the Gates Vulco Rope!

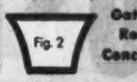
Whereas you felt an *out-bulge* when you bent a belt with straight sides, you find that the *Concave Sides* merely fill out and become *perfectly straight*. The sides therefore *press evenly* against the V-Pulley. This distributes the wear *uniformly* across the *full width* of the belt. Naturally, this means longer belt life and *lower* belt *costs* for you!

Only V-Belts made by Gates are built with concave sides. Whenever you buy V-Belts, be sure that you get the V-Belt with the Concave Sides—The Gates Vulco Rope!

What Happens When a V-Belt Bends

Straight-Sided V-Belt



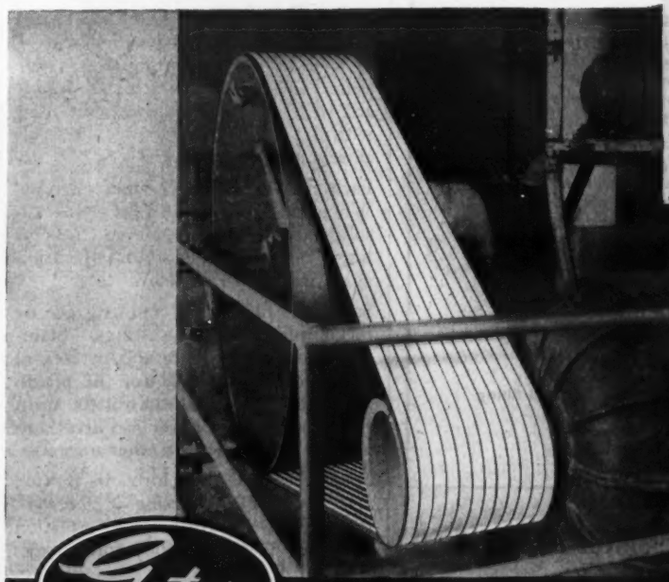


Gates Vulco Rope with Concave Sides

How Straight-Sided V-Belt Bulges in Sheave-Groove. Sides Press Unevenly Against V-Pulley Causing Extra Wear At Point Shown by Arrows.

The Concave Sides Fill Out to a Precise Fit in the Sheave Groove. No Side Bulge! Sides Press Evenly Against the V-Pulley — Uniform Wear — Longer Life!

The CONCAVE SIDE
(U.S. Patent No. 1813698)



This big blower supplies air to transport oats from storage to the processing plant at Quaker Oats Company, Akron, Ohio. It was formerly driven by a long flat belt. Mr. V. C. Headley, Maintenance Engineer says, "Since the Gates Vulco Rope Drive was installed, we have no worries about belts slipping or breaking and we are getting more grain through the line than ever before."

F CS-517

Gates
Hose V-Belts
Molded Rubber Goods
for Industry

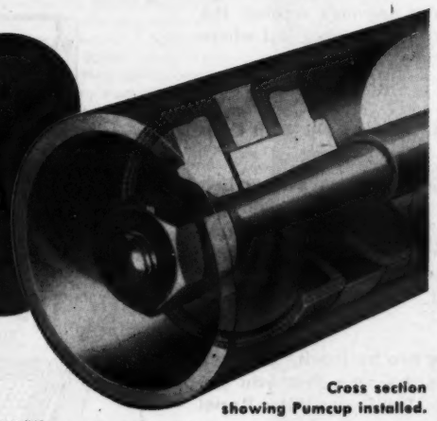
VULCO ROPE **DRIVES**
ENGINEERING OFFICES AND JOBBER STOCKS
IN ALL INDUSTRIAL CENTERS

THE GATES RUBBER COMPANY
DENVER, U. S. A.
The World's Largest Makers of V-Belts

When inquiring check FP 2519 on handy form, pgs. 2-3

PRESSURE UP! COSTS DOWN!

Slippage Reduced
in PUMPS
AIR CYLINDERS and
HYDRAULIC CYLINDERS
with
DARCOVA PUMCUPS



Cross section showing Pumcup installed.

NORMAL wear of ordinary packing reduces efficiency to a tremendous degree.

In contrast, Darcova Pumcups actually retain their efficiency . . . and they outlast most other packings at least 3 to 1!

Their scientific construction makes it possible to reach *and hold* peak efficiency. Under pressure Pumcups hug the cylinder walls to provide a uniform seal and exert full pressure where it is needed. This means reduced slippage, lower power costs and far less maintenance.

Write for helpful data-and-proof bulletins: No. 4502 on Pumcups for air and hydraulic mechanisms; No. 4401 on Pumcups for reciprocating pumps.

Cost-minded engineers in many industries have standardized on Pumcups to solve their packing problems. The list of successful applications includes the following installations:

Die casting machines
Forming and drawing presses
Straightening presses
Pipe bending machines
Briquetting machines
Pusher mechanisms
Door control devices
Lifting and dumping devices
Spraying equipment
Proportioning pump regulators
Recoil cylinders
Air booster pumps
Grease guns
Automatic bottling and filling machines
Extrusion presses
Steering mechanisms

DARCOVA
THE ORIGINAL COMPOSITION CUP

DARLING VALVE & MANUFACTURING CO.
WILLIAMSPORT 5, PA.

PUMCUPS

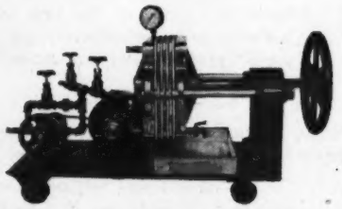
When inquiring check FP 2520 on handy form, pgs. 2-3

Filtering medium acts as gasket, eliminates use of washers . . .

pump can be used independently of the filter for transferring liquids

Uses: For fine filtration, clarification, polishing, or germ proofing of food and beverages.

Features: Filter is of the inside eye type in which the pads or other filter media act as the sealing gaskets, thus eliminating the use of rubber washers and permitting higher operating pressures. Design also provides positive internal sealing of the filter medium and eliminates any bypassing of unfiltered liquid.



Filter has frame 10" square

Pumps are arranged so that they can be used independently of the filter for transferring liquids from one container to another. Pumping capacity is two to three gpm.

Description: Pad filter has a 10" square frame, can be operated with 4 to 8 pads. Self-priming rotary gear pumps, driven with V-belts, are standard with all units. Filter can be used with any type of filter medium such as asbestos, paper or cloth.

Each pad is an independent element. When pads become plugged with solids they can be replaced and the filter can be readied for operation again in 5 to 10 minutes.

Standard filters are constructed of nickel plated bronze castings. Stainless steel backing wire and perforated metal screens are used for the plates, and stainless steel is used for the main filter supporting rods. Filters can also be constructed of other materials.

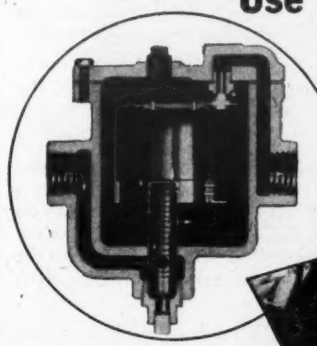
Source: F. R. Hormann & Co., Inc., Dept. FP, 17 Stone St., Newark 4, N. J. . . . or for more information check FP 2521 on handy form, pages 2 and 3.

Multiple V-belt drive standards set

Sixteen-page manual lists "Engineering Standards for Multiple V-belt Drives". To obtain two copies, remit $1.00 direct to Multiple V-belt Drive & Mechanical Power Transmis-

FOR HARD SERVICE

Use **SARCO** inverted bucket **STEAM TRAPS**



On Laundry Presses

Simplest construction; minimum maintenance cost; largest capacity; longest life. Since 1936 furnished with built-in strainer in all sizes, ½" to 2". Pressures to 900 psi. Catalog 351

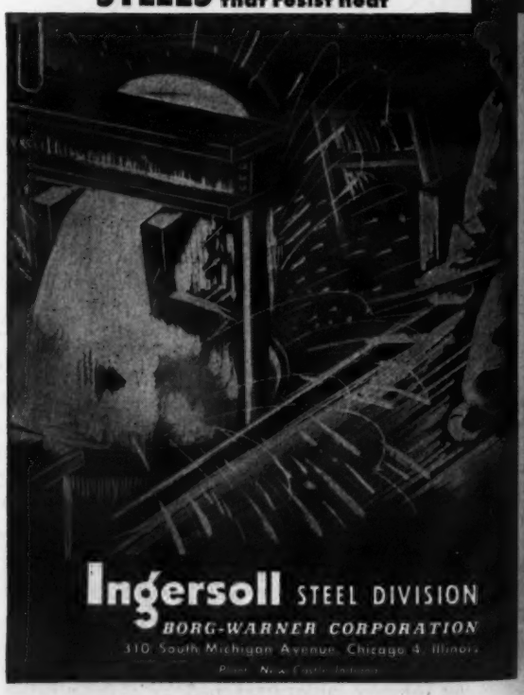
524

SARCO SARCO COMPANY, INC. Empire State Bldg., New York 1, N.Y.
SAVES STEAM SARCO CANADA LTD. TORONTO 5, ONTARIO

When inquiring check FP 2522 on handy form, pgs. 2-3

Ingersoll specializes in STEELS that resist corrosion that resist heat

BW



Ingersoll STEEL DIVISION
BORG-WARNER CORPORATION
310 South Michigan Avenue, Chicago 4, Illinois

When inquiring check FP 2523 on handy form, pgs. 2-3

You can install a Farris Stacon Temperature Regulator and forget all about it. You *know* it will operate positively and accurately under *all* conditions and at *all* times.

The Farris Stacon Temperature Regulator is dirt-proof, trouble-free. It operates with unheard of accuracy—to within plus or minus 1 deg. And that's not just under ideal circumstances. It functions with identical accuracy in the worst possible surroundings—provides air-operated sensitivity at self-operated cost.

Here's why: In patented Stacon Regulators, there are no packing glands to leak or bind. The liquid in the bulb flashes to vapor in the power bellows, providing hair-trigger response to move the valve disc.

You'll want complete details on this accurate and economical temperature regulator. Write for Stacon Bulletin 50-100.

Farris Stacon Corporation

430 COMMERCIAL AVE. PALISADES PARK, N. J.

When inquiring check FP 2524 on handy form, pgs. 2-3

SPRACO NOZZLES

Write for NOZZLE CATALOG *to*

SPRAY ENGINEERING CO.

113 CENTRAL STREET • SOMERVILLE 45, MASS.

When inquiring check FP 2525 on handy form, pgs. 2-3

Controls and protects small motors . . .

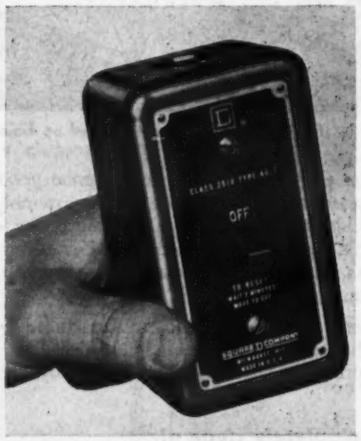
manual starter features trip-free overload protection

Uses: Manual starter designed to control and protect single phase AC and DC motors of 1 hp or less.

Features: Rugged double-break mechanism has quick make and break action. Contact tips are fine silver. Starter incorporates trip-free overload protection which provides a definite trip indication. Interchangeable overload relay units are accessible from front.

Description: Both single and double pole devices are available. Line and load terminals are arranged for straight-through wiring.

In addition to the open type starter, three others are offered: general purpose (NEMA I), water and dust tight (NEMA IV and V), and explosion resistant (NEMA VII and IX). The general purpose enclosure is die cast aluminum and can be supplied with pilot light for 115 and 230 volt operation without increasing overall dimensions. Water and dust tight enclosures can also be supplied with pilot light.



Motor starter

Standard switch box and flush plate can be used with open type.

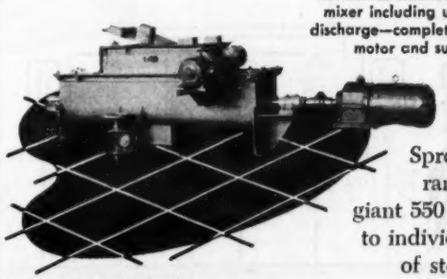
Source: The Class 2510 Type A fractional horsepower manual starter is made by Square D Company, Dept. FP, 4041 Richards St., Milwaukee 12, Wis. . . . or for more information check FP 2527 on handy form, pages 2 and 3.

SPROUT-WALDRON

FOOD MIXERS

for SANITARY OPERATION
ABSOLUTE UNIFORMITY
SPEED
EFFICIENCY
ECONOMY

Compact and efficient horizontal stainless steel mixer including uniflow discharge—complete with motor and support.



A combined sifting and mixing unit in use by a number of leading food processors for a variety of purposes.

This rugged, watertight mixer of wood construction is used in many fields, including starch manufacturing.

Sprout-Waldron horizontal mixers range from 2½ cu. ft. capacity to giant 550 cu. ft. equipment. Engineered to individual needs, they may be made of steel, stainless steel, non-ferrous metals, or wood. They can be jacketed for heating or cooling... lined with glass, porcelain, rubber, etc.

When you entrust your food mixing problems to Sprout-Waldron you are assured that 85 years of engineering know-how combined with outstanding manufacturing facilities will invariably provide the perfect solution.

A Sprout-Waldron representative will be glad to consult with you without obligation. Meanwhile, write for Bulletin SM-346. Address: Sprout-Waldron & Co., Inc., 25 Waldron St. Muncy, Pennsylvania

145-A

LOOK TO SPROUT-WALDRON for BETTER PROCESSING EQUIPMENT

Sprout-Waldron

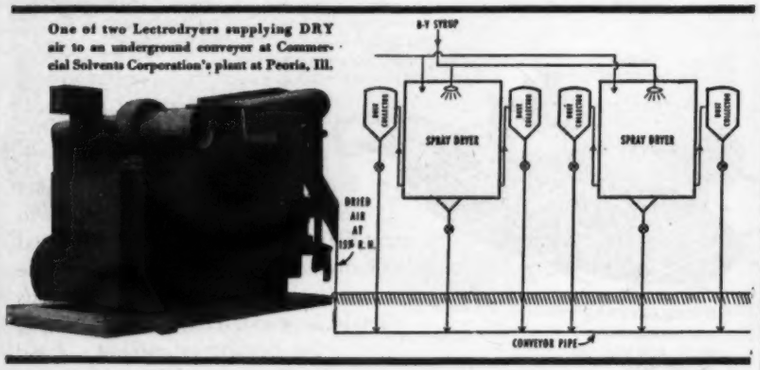
Manufacturing Engineers

SINCE 1866

MUNCY • PENNSYLVANIA

When inquiring check FP 2528 on handy form, pgs. 2-3

DRY air fed to conveyor during manufacturing process keeps B·Y flowing freely



One of two Lectrodryers supplying DRY air to an underground conveyor at Commercial Solvents Corporation's plant at Peoria, Ill.

The free-flowing property of Commercial Solvents' B·Y is extremely important to manufacturers of livestock and poultry feeds. This mill-ground meal mixes smoothly and uniformly, and doesn't lump up, because it comes to them DRY.

Gathered in dust collectors at the spray and drum dryers, B·Y passes through a 6-inch underground conveyor to the bagging and blending building. There's no chance for the dry powder to pick up moisture enroute, because two Type CH Lectrodryers feed DRY air to the conveyor. B·Y goes into the bags DRY.

Lectrodryers will make you independent of the weather by eliminating unwanted moisture at its source. Tell us your troubles with moisture and we'll suggest a cure. Pittsburgh Lectrodryer Corporation, 331 32nd Street, Pittsburgh 30, Pennsylvania.

In England: Birlec, Limited, Tyburn Road, Erdington, Birmingham.
In Australia: Birlec, Limited, 51 Parramatta Road, Globe, Sydney.
In France: Stein et Roubaix, 24 Rue Erlanger, Paris XVI.
In Belgium: S. A. Belge Stein et Roubaix, 320 Rue du Moulin, Dressoux-Liege.

MAIL THIS COUPON TODAY

LECTRODRYER
REGISTERED TRADEMARK U.S. PAT. OFF.

Pittsburgh Lectrodryer Corporation
331 32nd Street, Pittsburgh 30, Pa.

Send my copy of "Because Moisture Isn't Pink".

Name_____

Title_____

Address_____

When inquiring check FP 2529 on handy form, pgs. 2-3

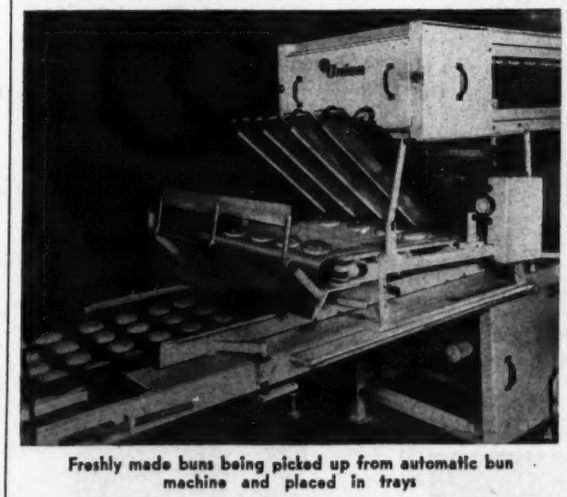
Produces 280 buns per minute; operators of dual unit never touch product . . .

after making either hamburger or frankfurter buns, unit places them in baking tray

Uses: Makes 280 hamburger or frankfurter buns per minute.

Features: Only two operators are required. They never touch the dough or finished buns.

Description: This dual unit consists of an Automatic Bun Machine and Pan-O-Mat tray loader. One operator feeds empty pans into the unit. These move forward and the flattened dough pieces are deposited in the center of



Freshly made buns being picked up from automatic bun machine and placed in trays

the pan spaces to produce hamburger buns. For frankfurter buns, a pressure board assembly is lowered into position. This curls and moulds the dough pieces. In this case, trays designed for the frankfurter shape are used. As the loaded pans emerge from the unit, a second operator stacks them.

Source: Both units manufactured by the Union Machine Company, Dept. FP, Joliet, Ill. . . or for more information check FP 2530 on handy form, pages 2 and 3.

Completely clean air comes from filter . . .

24 x 24 x 11-½" deep unit handles 850 cfm with pressure drop of only 1" of water

Uses: Filter is particularly valuable where completely clean air is needed. It eliminates mold spores and bacteria carrying dust. A special use may be where yeast cultures must be kept pure in breweries.

Developed originally for the AEC to filter radioactive material from the air, this filter is effective against all dust, smoke, fumes, and radioactive particles.

Features: Laboratory tests have shown that filter removes 99.98% of all measurable particles from the air. After filter has been in use this figure rises to within a few thousandths per cent of perfect efficiency. Even particles in the 0.2 to 0.3 micron range are effectively trapped.

Description: Filter is made of a special paper somewhat resembling blotting paper. Actually this paper contains asbestos fibers of submicroscopic size. These fibers

Complete PRODUCT MIXING with LEE DOUBLE-MOTION Center Line Scraper AGITATORS

Standard equipment for over 20 years.

✓Safe Controlled RAISING AND LOWERING with Hydraulic Operated CYLINDER

Operates directly from your present water system

✓Swings out FOR EASY CLEANING

Cleaning over kettle means

- No hot messy parts to disassemble
- Savings in time and labor
- No contamination of parts

Our descriptive bulletins on these units will interest you—*WRITE FOR THEM.*

LEE METAL PRODUCTS CO.
414 Pine Street
PHILIPSBURG, PA.

ALL LEE KETTLES ARE MADE TO A.S.M.E. CODE

When inquiring check FP 2531 on handy form, pgs. 2-3

provide such tortuous paths that almost none of the particles can get through. At the same time, the paper is strong enough to be folded without rupture.

Folded into an accordian pleat, the paper is packed into the filter so as to provide an extensive filtering area within a small space. Two filter sizes are available. A 500 cfm unit measures 24 x 24 x 5-⅞", and an 850 cfm unit has the same frame dimensions but is 11-½" deep. Static pressure drop across these units when new is less than 1" of water. Continued use will increase this value as the paper becomes filled with filtered matter. It is expected that the filter would be replaced when the static drop had reached a few inches — this would probably be after months of normal service.

Trapping, as it does, even these very small particles, the filter is capable of actually sterilizing air by filtering out the offending yeasts, fungi, and spores.

Source: Cambridge Corp., Dept. FP, 350 S. Geddes St. Syracuse, N.Y. . . . or for more information check FP 2532 on handy form, pages 2 and 3.

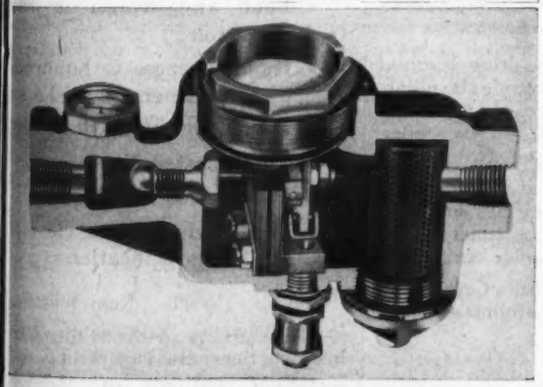
Seven different devices combined in steam trap weighing 8½ lb . . .

has the same capacity and efficiency as conventional 2" traps weighing up to 200 lb

Uses: Standardized steam trap, replacing range of conventional traps from ½ to 2". In superheated power plants it can handle pressures to 650 psi.

Features: Valve is opened by steam pressure and closed by thermal action.

Description: Seven different devices are combined in one compact unit weighing 8½ lb. Devices are: steam trap; air bypass valve; check valve; self-cleaning strainer; flow control glass; temperature indicator gauge; and temperature controller. Unit has same capacity and efficiency as conventional 2" traps weighing up to 200 lb. It can be installed in any position without affecting its operation.

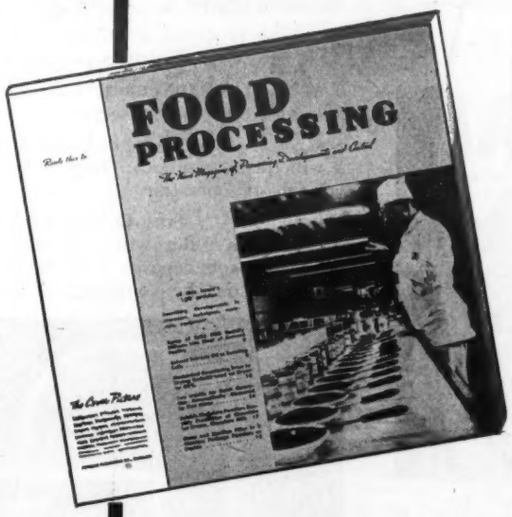


Cutaway view of 7-in-1 steam trap

Bimetal element operating the valve is a function of saturated steam curve, so that one trap can be used for very wide range of steam pressures and temperatures. Discharge temperature can be regulated by external device. No additional joints, nipples, etc. are needed.

Source: Universal steam trap is product of Velan Engineering Company, Dept. FP, 1216 Drummond St., Montreal, Canada . . . or for more information check FP 2533 on handy form, pages 2 and 3.

Have you ever wondered . . .?



How this magazine comes to you . . . why there's no charge for it ? ? ?

MAYBE, like many others, you've always thought that all publishers make their money, or much of it, from the subscriptions they sell.

'Tisn't so . . .

No, 'tisn't so. With the exception of a few general magazines (e.g. READER'S DIGEST) that sell hundreds of thousands — some millions of copies — most industrial publishers with relatively small circulations actually lose money on their subscription sales.

Then how do industrial publishers make money? As you can guess, they make it from the advertising they sell. Total subscription sales are hardly a "drop in the bucket" compared to advertising revenue.

Advertisers demand best coverage

Since advertisers pay the bills, they demand best possible coverage of ALL important men in the field. So it's up to the publisher to publish the most readable magazine possible . . . then to insure coverage of the maximum number of the best readers.

. . . And you can't do that by *selling* subscriptions — sales costs are high — a large share of the subscribers cancel each year — and no matter how much time, money, and pressure is used there are always some of the important men who *will never buy.*

As you can see, the most effective method of getting the kind of coverage advertisers want is (a) to handpick the most important men and (b) send the magazine to ALL these men. That's why you get FOOD PROCESSING free — that's why we spend thousands of dollars on each issue to make it worth your time to read it. For you are an important reader in the food processing field.

Have you other questions? Please write us.

Obviously, we can't answer all questions here; e.g. questions such as why some publishers drive so hard to get subscriptions. Briefly the answer to that one is, they get a postal subsidy on "paid subscription". But we choose to send FOOD PROCESSING to all the important men who can be interested in reading it. We pay extra postage to give this service to all men like yourself, rather than miss those who can't be forced to pay a subscription fee. That way, we get best coverage for our advertisers too.

If you'd like to know more of the answers to such questions, drop us a line and ask the questions you have in mind. We'll do our best to answer.

Moreover, we'd appreciate hearing from you. Won't you write us, telling us what you think of FOOD PROCESSING, how you use it, or how you think we could make the publication better.

FOOD PROCESSING
***Published by* PUTMAN PUBLISHING COMPANY**

Creators of PUTMAN-STYLE Magazines
. . . terse, vital editorial; "hand-picked" circulation; square, high-visibility format; quality readership; hence more READER ACTION

SAYS

STOP
TO SOLIDS

Yarway
Fine Screen Strainers
prevent rust,
scale and dirt from
clogging
mechanical equipment.
Screens of woven
Monel wire, bodies and
screen caps
cadmium plated. Made in
10 sizes ¼ to 3"
Sold by 216 industrial distributors
Write for Bulletin S-203.

YARNALL-WARING COMPANY
126 Mermaid Ave., Philadelphia 18, Pa.

YARWAY STRAINERS

When inquiring check FP 2534 on handy form, pgs. 2-3

Faster, more efficient vegetable processing for large Eastern grocery

● This large chain store uses a Cyclone Flat Wire Stainless Steel Conveyor Belt to carry celery, spinach, beets and other fresh vegetables through a series of overhead sprays. The open type construction of this belt assures maximum drainage and removal of dirt. As all trimming and other processing can be carried on while the vegetables are on the belt—the time and expense of manual handling is eliminated and an hourly production rate is established.

Cyclone makes three types of belts—Flat Wire, Chain Link and Flex-Grid—one just right for your production system. For more information—get in touch with our nearest sales office and write for a copy of our catalog #4.

CYCLONE FENCE DIVISION
(American Steel & Wire Company)
DEPT. K-101, WAUKEGAN, ILL.
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS CYCLONE METAL CONVEYOR BELTS
UNITED STATES STEEL

When inquiring check FP 2535 on handy form, pgs. 2-3

When frosting is rolled on, appearance is good, waste is slight . . .

icing is spread evenly over high and low points of up to 60 coffee rings per minute

Uses: Used for automatically icing coffee rings, sweet rolls and other bakery goods.

Features: Icing is applied to item without waste. While it will follow contour of ring, roll, or other shape, it does not fall off onto tray.

Description: Frost-O-Fast Icing Machine employs a rubber foam roller which receives icing from a slotted icing head and deposits it on baked goods passing under the roller on the conveyor. Roller follows individual

Foam rubber roller eliminates waste

contour of any shape or size baked goods. Icing is spread evenly on high and low points without covering the filling, and without dripping or loss. Pressure on the baked goods is controlled by a counterweight on the roller. Width and amount of icing can be adjusted as desired.

Unit is mounted as shown on conveyor and is adjustable for conveyor width. Sweet goods, coffee rings and other baked goods up to 18 inch width can be handled. As many as 60 coffee rings or 12 pans per minute can be iced.

Source: Development of Basic Foods Sales Corp., Dept. FP, Union City, N. J. . . . or for more information check FP 2536 on handy form, pages 2 and 3.

Polyethylene coating stops corrosion of conduit by fumes . . .

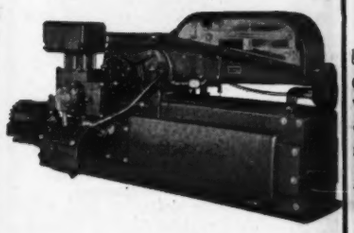
0.020" coating is permanently bonded to metal tubing

Uses: Coated conduit is recommended where corrosive fumes destroy or damage electrical conduit.

Features: Permanently bonded coating of polyethylene covers the conduit.

Description: "Electrunite E.M.T." is a standard size galvanized electrical conduit coated with extruded polyethylene 0.020" thick. The coating is permanently bonded so that the conduit may be bent and handled exactly as ordinary metal conduit. Connections are made by stripping

W&T MERCHEN WEIGH FEEDERS
Give Greater Product Uniformity



Weigh-blending of food ingredients—the only *accurate* way to blend—calls for precision equipment and "know-how".

W&T Merchen Weigh Feeders meet the first of these requirements with these features:

- Feed and weigh in one operation
- Handle ounces to hundreds of pounds per minute
- Manual or automatic control
- Easy accessibility
- Handy feed register
- Meet underwriters class II group G specifications

Your W&T Representative brings you the "know-how" from his experience in supervising and servicing hundreds of Merchen Weigh Feeder installations.

Write today for Descriptive Bulletins.

M-14a

WALLACE & TIERNAN COMPANY, INC.

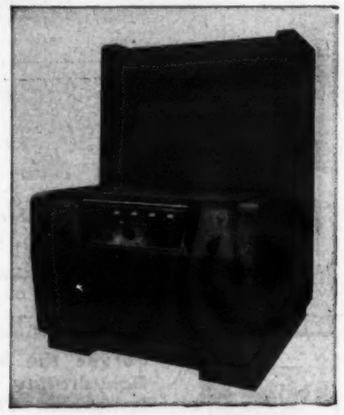
When inquiring check FP 2537 on handy form, pgs. 2-3

a section of the end of the conduit and using standard connecting fittings. These connections are then taped with polyethylene or vinyl tape. Coated conduit, properly installed, is reported to stand up well under fume conditions and even under occasional splashings with some solvents and corrosives. It is not recommended where it will be wet with petroleum solvents.

Source: Available from Steel and Tubes Div., Republic Steel Corporation, Dept. FP, 224 E. 131st St., Cleveland 8, Ohio ... or for more information check FP 2538 on handy form, pages 2 and 3.

Semi-skilled help can operate generator used for dielectric heating . . .

unit can be adapted to batch or continuous production methods; has simplified operating controls



For dielectric heating

Uses: As a source of radio-frequency waves for dielectrically heating nonmetallic materials.

Features: Generator is readily adaptable to batch or continuous production methods. Pushbutton control, stepless adjustment of output power, and various protection devices make this generator suitable for use by semi-skilled employees.

Description: Twenty-kw generator has all adjustments necessary for operation on the front panel. Rated power is delivered at a 100 percent duty cycle in accordance with NEMA standards. Built-in load coupling and tuning elements permit maximum transfer of power into a wide range of loads by front panel control. Enclosure is designed to minimize R-F radiation, and the complete generator is certified to comply with FCC regulations.

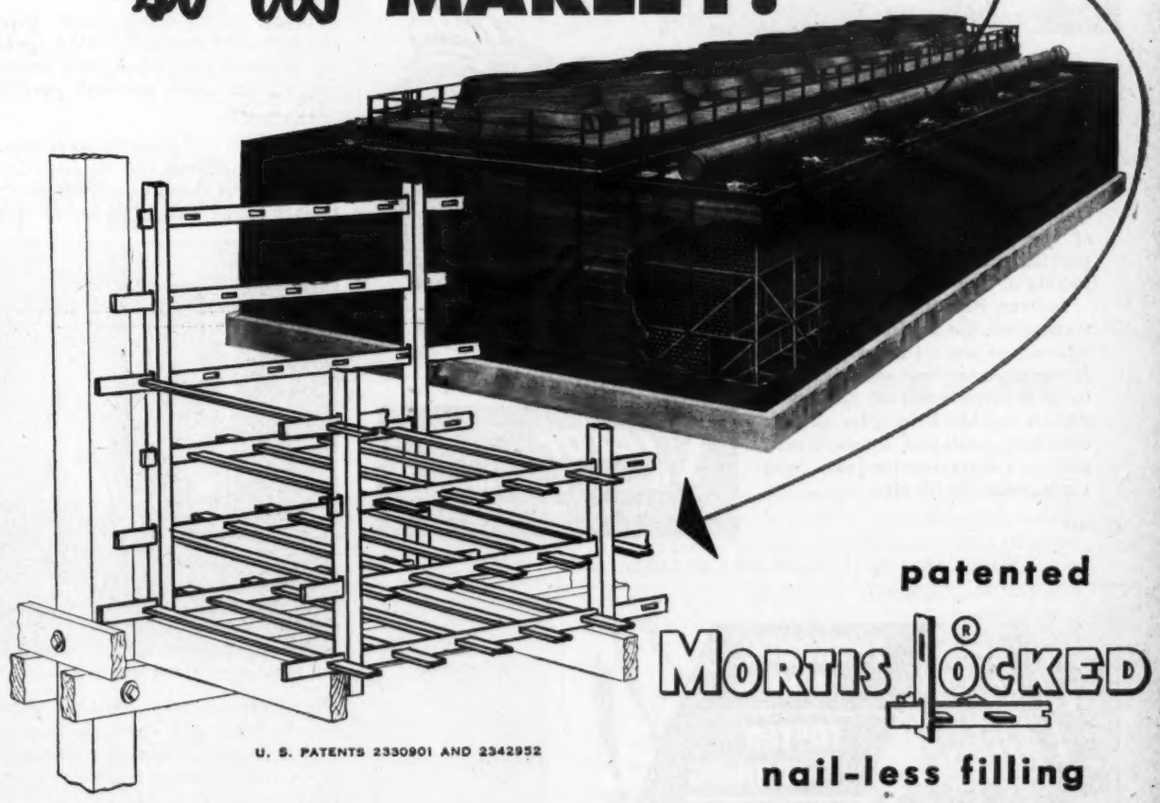
Source: Westinghouse Electric Corporation, Dept. FP, Box 2099, Pittsburgh 30, Pa. . . . or for more information check FP 2539 on handy form, pages 2 and 3.

Bulletin features synthetic fibers used in filter cloths

Six-page, two-color bulletin features actual samples of nylon, orlon, and dynel fabrics used in all types of pressure and vacuum filters, centrifuges, and dry filtration equipment. Also included is a selection chart showing which materials are best for a list of typical corrosive chemicals and solvents.

Service life of three to thirty times that of conventional fabrics is due to high strength, resistance to practically all acids, alkalis, salts and solvents, and complete immunity to bacterial action. Nylon and orlon types can be used continuously at temperatures of 300°F. Bulletin 16 is issued by Filtration Fabrics Div., Filtration Engineers, Inc., Dept. FP, 155 Oraton St., Newark 4, N. J. When inquiring specify FP 2540 on handy form, pages 2 and 3.

It's new... so it's MARLEY!



patented MORTISLOCKED nail-less filling

U. S. PATENTS 2330901 AND 2342952

. . . THE COOLING TOWER FILLING THAT BREATHES

. . . has long been an important factor in making Marley Double-Flow the world's leading water cooling tower. Now it's redesigned for even greater ruggedness, more long-lasting stability.

And it retains its ability to expand and contract with every variation of temperature and moisture.

Design simplicity is the keynote of MortisLocked filling . . . no nails, bolts or spacer blocks are needed. There are no parts to rust, corrode or fall out. Bulletin ML-51 graphically portrays MortisLocked superiority . . . write for it now.

producers of
DOUBLE FLOW TOWERS
DRICOOLERS
AQUATOWERS
NATURAL DRAFT TOWERS
CONVENTIONAL TOWERS
SPRAY NOZZLES
VAIRFLO TOWERS

MARLEY

The Marley Company, Inc.
KANSAS CITY 15, KANSAS

When inquiring check FP 2541 on handy form, pgs. 2-3

SUPRENE BELTING

Helps Food Stay Wholesome

Suprene Belting has been carefully perfected to help foods stay wholesome...never imparts any taste or odor to conveyed products. Made of tough, durable duck and impregnated with the exclusive Victor "Neoprene" compound, Suprene has proved of inestimable value in the packing, processing and manufacture of food products.

Suprene Belting is not only waterproof, but is also highly resistant to the injurious effects of fats, greases and fruit acids. It is easy to wash with steam or hot water. Specify Suprene Belting for all your conveying needs and be sure of safe, sanitary conveyance for years. Send for bulletin 20—it's free.

Victor Balata & Textile Belting Co.

53 Park Place, New York 7 · 300 W. Hubbard Street, Chicago 10

Factory, Easton, Pa.

6456

When inquiring check FP 2542 on handy form, pgs. 2-3

THOROUGH MIXING

FASTER COOKING

AT LOWER COSTS

Actual production figures show that processing costs go down, efficiency goes up with Hamilton Stainless Steel Steam-Jacketed Mix-Cookers. Built to ASME Specifications, Hamilton Stainless Steel mix-cookers are available with single or double action agitators. Stock specifications include maplewood scrapers, but can be furnished with soft metal or plastic scrapers guaranteed not to effect taste or flavor of product.

Extra large steam jacket and fittings, plus larger draw-off, will speed operation, cut costs. (Draw-off sizes up to 4" and larger if necessary.) Investigate the Hamilton Stainless Steel Mix Cooker and Tilting Kettles today.

HAMILTON

copper & brass works

1105 Lincoln Ave., Hamilton 8, Ohio

Since 1876

HAMILTON COPPER & BRASS WORKS, INC. HAMILTON, OHIO

Please send complete information on Hamilton Stainless Steel Mix Cookers. H

NAME .....

ADDRESS .....

COMPANY .....

When inquiring check FP 2543 on handy form, pgs. 2-3

To get more information on products see Readers Service Slip just inside the Front Cover

Speed of mixer changed with new gears . . .

gears available provide speeds from 16.5 to 420 rpm

Uses: Where future needs will call for different mixing speeds and mounting.

Features: By using proper gears, any one of 16 standard AGMA speeds are obtained. Interchangeable mounting brackets allow use with open or closed tanks.

Description: Gearing is so arranged that a gear change can be made in a short time without using any special tools. Model uses independent shaft

Mixer speed is changed with gears

suspension so that different shafts may be used with the same gearing. Impellers are standard and obtainable in a variety of shapes and sizes. Power response data is available for all types.

Source: Mixer is available from Mixing Equipment Co., Inc., Dept. FP, Rochester, N. Y. . . . or for more information check FP 2544 on handy form, pages 2 and 3.

Supplements catalog currently used

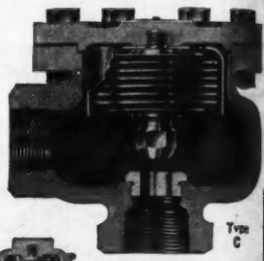
All boiler equipment not included in current catalog of April 15, 1951 is discussed in 20-page supplement. Diagrams, specifications and descriptive material are given for boiler water feeders, make-up water feeders for receivers, low water fuel cut-offs, and float-operated switches. Also, small float valves, solvent still regulators, electrical switches and flow switches.

July 25, 1951 Supplemental Catalog is issued by McDonnel & Miller, Inc., Dept. FP, 3500 N. Spaulding Ave., Chicago 18, Ill. When inquiring specify FP 2545 on handy form, pages 2 and 3.

Nicholson Steam Traps

CUT COOKING TIME from 6 to 3½ HOURS

At a Southern chemical plant, tests run on steam cookers showed a 3½-hour cycle with Nicholson traps against 6 hours for competing units. Reasons for Nicholson's faster heat transfer: operate on lowest temperature differential; 2 to 6 times average drainage capacity; maximum air venting. Sizes, ⅛" to 2"; press. to 225 lbs. See why leading plants are increasingly standardizing on Nicholsons.



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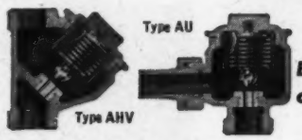


Type AU

Type AHV

BULLETIN 450 or see Sweet's

W. H. NICHOLSON & CO. 184 OREGON STREET WILKES-BARRE • PA.

Sales and Engineering Offices in 53 Principal Cities

When inquiring check FP 2546 on handy form, pgs. 2-3

P&L

Serves the World with Fish Dehydrating and Reduction Equipment Through these Agencies:

WILBUR-ELLIS COMPANY, 334 California St., San Francisco 4, Tel. Garfield 1-1775. Cables: "Wilburell"

WILBUR-ELLIS CO. (Pty) LTD., 813 Grand Parade Center, Cape Town, So. Africa, Tel. 2-7595. Cables: "Wilburell"

BULLOCK-SMITH ASSOCIATES, 136 Liberty St., New York 6, N.Y., Tel. Beekman 3-0370-1. Cables: "Bullsmith"

FRAZAR & HANSEN, LTD., 300 Clay St., San Francisco 11, Tel. Exbrook 2-5112. Cables: "Frasen"

W. S. SANDERS, 1810 Core Avenue, Norfolk 7, Virginia, Tel. 51074

CITRUS CHEMICAL PRODUCTS, Inc., Plymouth, Florida, Tel. Plymouth 2211

Contact us—or any of these agencies for your dehydrating and reduction requirements.

Currently shipping fish reduction equipment to England, So. Africa, Peru, Norway, Canada, Mexico, and throughout the United States.

On receipt of request we will advise you of nearest P&L equipment installation and arrange for your inspection.

— MANUFACTURERS OF —

Reduction Equipment from "Bin to Sack" — Cookers — Hammer Mills — Rotary Fish Presses — Low Temperature Driers — Etc. Etc.

P & L WELDING & MACHINE WORKS

519 East LaPalma St., ANAHEIM, CALIF., Phone: Anaheim 4311

When inquiring check FP 2547 on handy form, pgs. 2-3

Dehumidifies rooms of 8000 cu ft volume . . .

compact, portable unit begins to dry air when it is plugged into 110 volt line

Uses: Will dehumidify any closed area of tight construction up to about 8000 cu ft.

Features: Now in production after extensive lab and field tests, dehumidifier is compact and portable (weighs 55 lb). Unit is put into operation simply by plugging into 110 volt AC line.

Description: Damp air is drawn into dehumidifier by fan located inside the unit. Moisture condenses on cold coils and drops to pan. Pan may be emptied (about once a day) by hand, or garden hose or copper pipe may be connected for automatic condensate discharge.

The Model DMS 4 is powered by silent, hermetically sealed Tecumseh compressor. Evaporator coil is aluminum with extended surface for high efficiency; condenser uses finned copper tubing. Air flow rate is 110 cfm.

Maker can supply a simple plug-in control like a home thermostat to maintain humidity at desired percentage.

Measurements of the dehumidifier are: 17" long, 13" wide and 15½" high. Finish on outside is baked crackle green.

Source: Development of Abbeon Supply Co., Dept. FP, 58-10 41st Drive, Woodside, N. Y. . . . or for more information check FP 2548 on handy form, pages 2 and 3.

Bin vibrator starts easily, without pounding . . .

lightweight, quiet unit can be installed readily in a variety of positions; won't harm bin

Uses: Aids movement of such materials as grain, flour, bulk food products and other materials that arch and resist movement toward hopper and bin outlets or where wet mixtures tend to entrain air.

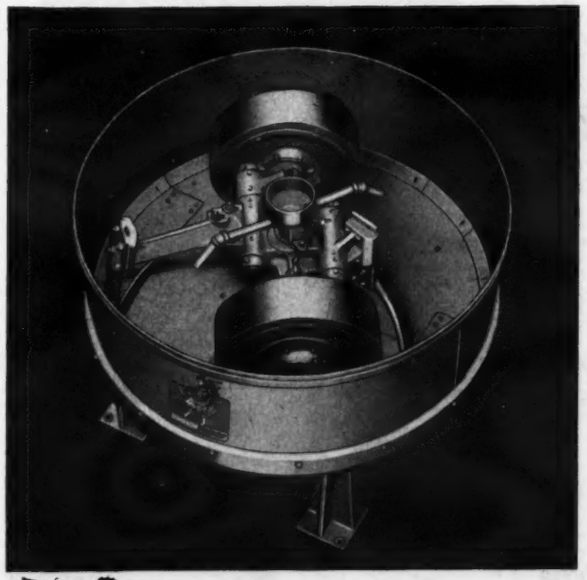
Features: Starts instantly without manual assistance, and is reported to be virtually noiseless, self-lubricating and jam-free. Light in weight, the vibrator can be mounted easily in many different ways.

Description: Peterson Vibrolator vibrates bin and causes materials to flow toward outlet. The powerful all-directional vibration does not damage hopper or storage bin. Unit is available in different sizes to suit various operating conditions, materials and equipment.

Source: Made by Martin Engineering Company, Dept. FP, Kewanee, Ill. . . . or for more information check FP 2549 on handy form, pages 2 and 3.

Taking the Guesswork

OUT OF HER BAKING



CAKES 'like mother used to make' can be a reality to every housewife with today's prepared mixes. Gone is the guesswork of types and correct amounts of ingredients. Now cakes, pies, cookies and scores of other baked goods can have that same uniform texture and flavor every time.

In order to assure housewives of these perfect results, many producers of prepared mixes are depending on Simpson Mix-Mullers. These versatile machines turn out a thoroughly blended product of unvarying quality faster, and at a much lower cost by utilizing the mulling principle of controlled mixing. This mixing action is similar to the kneading and smearing by a mortar and pestle. Balling of materials is eliminated and a thorough dispersion of the mixed elements is quickly attained.

Simpson Intensive Mix-Mullers are built in capacities from 1/10 to 30 cu. ft. and are available in stainless steel and other corrosion-resistant materials. They may be equipped with oil, steam or water jackets and for mixing under pressure or vacuum.

Simpson Mix-Mullers offer a positive solution to countless food processing problems. *Write for further details, outlining your particular mixing requirements.*

SIMPSON Mix-Muller® Division

NATIONAL ENGINEERING CO. 623 Machinery Hall Bldg., Chicago 6, Ill.

When inquiring check FP 2550 on handy form, pgs. 2-3

ALLIGATOR®

CONVEYOR BELT LACING

Every Tooth A Vise*

in Long Continuous Lengths . . . made of Monel for Food Plants

- ★ Excellent for flat conveyors, package conveyors, portable loaders, etc. specify Monel.
- ★ In canneries where corrosion or rust is a problem specify Alligator made of Monel.
- ★ For magnetic separators or anti-sparking specify Alligator made of Everdur.
- ★ Separable and smooth on both sides.
- ★ 12 sizes. For belts from 1/16" to ⅜" thick—and *any width.*

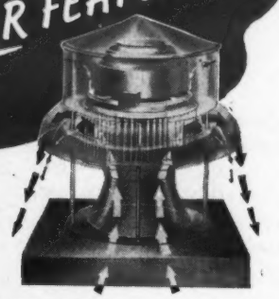
Order from Your Supply House. Ask for Bulletin A-60.

FLEXIBLE STEEL LACING CO. 4639 Lexington St., Chicago 44, Ill.

JUST A HAMMER TO APPLY IT

When inquiring check FP 2550A on handy form, pgs. 2-3

THREE VITAL GALLAHER FEATURES



GALLAHER Air-Van POWER EXHAUSTERS

Pats 2526290 2188741

Certified Ratings Impartial laboratory tests under the direction of a nationally recognized authority, covering the entire unit. Capacities 150-11,000 CFM; Static Pressures to 1¾"

Scroll Effect An exclusive built-in Gallaher feature Maximum efficiency beyond ¼" static pressure is not possible without it.

Safe Fume Handling Motor out of the airstream and a positive air **seal-off** around motor shaft prevents fume passage into motor housing while unit is in operation.

See your Gallaher Representative or write Dept. F, 4108 Dodge St. Omaha, Nebraska

The GALLAHER Company

Omaha, Nebr. Owatonna, Minn.

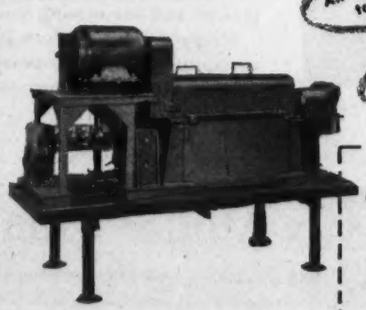
When inquiring check FP 2550B on handy form, pgs. 2-3

do you suffer from any of these canners' "HEADACHES"?

If so, the Rex® Can Cleaner and Drier can solve your problem

The Rex Roto-Brush Can Cleaner and Drier is "just what the doctor ordered" for anyone troubled with can drying problems. Installed in a processing line, its high-speed brush will thoroughly dry up to 300 cans a minute and speed them on to labeling or shipping. It removes all water and sweat from cans, eliminates the need for expensive air drying conveyor tracks, guards against water spots, rust, and failure of labels to adhere.

Introduced only 2 years ago, the Roto-Brush is now cutting costs and speeding production in a wide variety of canning plants. If you have a can drying problem, chances are the Roto-Brush can help you solve it. For complete information, just mail the coupon.



Rusty cans

Excessive humidity clinging to can

Labels failing to adhere to cans

Air drying conveyor lines taking too much space

Water spots on labels

Chain Belt Company 51-205A
1699 W. Bruce Street, Milwaukee 4, Wis.

Gentlemen: My can drying problem is.....

.....

.....(Please send additional information)

Name.....

Company.....Dept.....

Address.....

City.....State.....

REX FOOD PROCESSING EQUIPMENT

When inquiring check FP 2551 on handy form, pgs. 2-3

FOOD NEWS & INTERPRETATIONS

(*Continued from page 7*)

itation foods direct to Charles W. Crawford, Commissioner of Food and Drugs, Federal Security Agency, Washington 25, D.C.

Recent census statistics basis for forecasts

Better labeling, more nutritious foods, as well as more foods specifically for babies can be forecast from preliminary statistics recently released by the Census Bureau.

From 1940 to 1950 more educated women joined the ranks of mothers. Increases according to schooling were as follows: college graduates, 77%; high school graduates, 48%; grade school graduates, only 24%.

Educated women know more about nutrition and normally will have a higher purchasing power, since college educated spouses have above-average incomes. Thus these mothers will be alert to label descriptions during food purchases and will educate their children to eat healthful foods.

Census Bureau also foresees a continuing increase in baby population. Between 1940 and 1950 more than 32 million babies were born. The record year was the 3,900,000 born in 1947, but already birth registry for the first five months of this year was only 7% below this record; hence the Bureau expects baby populations to set records every few years.

Convention & Exhibit Schedule

Oct. 1-3. Association of Official Agricultural Chemists, Shoreham Hotel, Washington, D.C.

Oct. 1-4. Industrial Packaging and Materials Handling Exposition, 6th Annual Meeting, Public Auditorium, Cleveland.

Oct. 8-10. American Oil Chemists' Society, Edgewater Beach Hotel, Chicago.

Oct. 8-12. National Safety Council, 39th National Safety Congress and Exposition, Chicago.

Oct. 22-24. Packaging Institute, Annual Forum, Commodore Hotel, New York.

Nov. 5-8. All-Industry Refrigeration and Air Conditioning Exposition, Navy Pier, Chicago.

Nov. 12-15. American Bottlers of Carbonated Beverages, 33rd Annual Meeting, National Beverage Exposition, Armory, Washington, D.C.

Nov. 26-Dec. 1. 23rd Exposition of Chemical Industries, Grand Central Palace, New York.

1952

Jan. 19-23. Canning Machinery & Supplies Association Exposition, National Canners Association, and National Food Brokers Association, Annual Convention, Atlantic City.

Feb. 19-21. Technical Pickle School, Michigan State College, East Lansing.

April 1-4. National Packaging Exposition, Auditorium, Atlantic City.

April 7-9. American Society of Lubrication Engineers Show, Annual Meeting, Hotel Statler, Cleveland.

April 28-30. National Independent Meat Packers Association Convention and Exposition, Hotel Sherman, Chicago.

Discussed in This Issue---

PROCESSES, EQUIPMENT *and* MATERIALS

Use this "quick-locator" when you want information on a specific type of process, equipment or material mentioned in the processing stories or the advertisements in this magazine. Everything discussed in this issue is given here, if you want more data you can write manufacturer direct . . . or turn to pages 2 and 3 and use the handy "Information Request Slip." This is a special service provided by the publisher . . . no obligation or charge, of course. The publisher contacts the proper manufacturers for you—information comes to you direct.

A

Adhesives, Canners 23
Adhesives, Corrosion-resistant .. 65
Adhesives, Heat-sealing 11
Adhesives, Laminating 11
Agitators, Kettle 74
Agricultural Equipment 36
Air Conditioning 24
Alarms, Combustion 61
Antifoaming Agents 16
Apple Products 56

B

Bag Tagging Machine 20
Bags, Cellophane 24
Bags for Coffee 16
Bags, Plastic 25
Baggers, Gravimetric 22
Barrels, Aluminum 34
Barrows, Discharge Gate 34
Barrows, Tipping 34
Belts, Conveyor, Acid-proof ... 78
Belts, Conveyor, Metal 76
Belts, Conveyor, Wire 38, 60
Belts, Processing, Metal 35
Bins, Storage 70
Bins, Concrete Stave 35
Boards, Cutting 70
Boiler Scale Prevention 62
Bottle Washing 57
Boxes, Packaging 26
Brushes, Power 66
Bun Proofer-moulder-panner 74

C

Canning Equipment 12
Carton Blanks 32
Cartons, Folding 28
Cellophane 25
Cements, Corrosion-resistant 65
Chain, Conveyor 37, 46, 47
Chain, Roller 46, 47
Chlorinating Equipment 66, 68
Chlorinating Reagents 66
Chlorination Meters 64
Citric Acid 2
Cleaners, Air 69
Cleaners, Can 80
Cleaners, Steam-jet 67
Cleaners, Vacuum 64
Cleaners, Water-air 66
Cleansers 65
Cleansers, Industrial 64
Cleansers, Smoke House 68
Coatings, Plastic Cork 68
Coatings, Polyethylene 76
Color Blends, Secondary 16
Conduit, Plastic-coated 76
Contactors, Magnetic 50
Containers, Insulated 23
Containers, Shipping 21
Controllers, Combustion 61
Controllers, Liquid Level .. 50, 56
Controllers, Milk Canning 51
Controllers, Timing 50
Conveyors, Flexible 33
Conveyors, Oscillating 37
Conveyors, Pneumatic 31, 37, 39, 70
Conveyors, Portable Gravity 36
Conveyors, Roller 34, 38
Conveyors, Screw 34
Conveyors, Tubular 32
Conveyors, Wheel 34
Cooker-Coolers 44
Cookers, Steam-jacketed 78
Cooling Towers 44
Counters 28
Couplings, Flexible 26, 46, 47
Cutters, Knife 57

D

Dairy Sanitation 61
DDT Data 19
Dehumidifiers 12, 79
Dehydrating Agents 6
Dehydrators, Fish 78
Directory, Biological 57
Dirt-fall Collector, Directional 42
Dispensers, Tape 29
Dispensers, Towel 63
Drains, Floor 62
Driers, Can 80
Drives, Adjustable-speed 14, 15
Drives, Fluid 45
Drum Liners, Plastic 25
Drums, Stainless Steel 34
Dryers, Air 74
Dryers, Spray 44
Drying Research 17
Dust Collectors 64, 70
Dust Cups, Neoprene 64

E

Enamels, Wet-surface 66
Exhausters 43
Exhausters, Powered 80

F

Fabrication, Metal 38
Fabrication, Wire Cloth 27
Fans 43
Fasteners, V-belt 58
Feeders, Constant Weight 71
Feeders, Gravimetric 38
Feeders, Vibratory 6
Feeders, Weigh 76
Filling Machines 27, 29
Fillings, Cooling Tower 77
Filter Cloths 27, 38, 77
Filters 72
Filters, Air 74
Filters, Leaf 62
Filters, Oil 60
Filters, Stainless Steel 60
Filters, Vertical Tube 36
Fittings, Sanitary 39
Floor Maintenance 58, 61, 66
Floor Patch & Resurfacer 82
Floors 67
Flow Detector 51
Fumigants 65

G

Generators, Steam 40, 42, 58

H

Harvesters, Spinach 18
Heads, Safety 67
Heat Exchangers 8
Heat Sealers 26, 59
Heaters, Pipeline 4
Heating, Dielectric 77
Hoists, Electric 36
Humidity Control 24

I

Ice Cream Sleeves 22
Icing Machines, Baked Goods 76
Indicators, Differential Pressure 52
Ingredients, Riboflavin 16
Insecticides, EPN 19
Instrumentation 50
Instruments, Bacteria Count 48
Instruments, Text Book 56

J

Joints, Rotary Pressure 42

K

Kettles, Aluminum 55
Kettles, Pressure 3

L

Labelers, Automatic 24
Labelers, Bottle 28
Lacings, Conveyor Belt 80
Lighting, Fluorescent 27
Liners, Drum 25

M

Material Handling 35, 41
Material Handling Equipment .. 38
Meters, Liquid 50, 51
Meters, Moisture 56
Meters, pH 52
Mixers 60, 78
Mixers, Centrifugal 81
Mixers, Horizontal 73
Mixers, Mulling 79
Mixers, Push-button 10
Moisture Determination in Rubber 46
Molasses Purification 15
Motors 59
Motors, Asbestos-protected 45
Motors, Electric 57

N

Nephelometers, Photo 53
Nozzles, Spray 16, 73

O

Oscilloscopes, Tracer 50

P

Packaging Machines, Powder Packet 28
Packers, Bag 21
Packings, Sheet 58
Palletings 32
Pallets, Collapsible 36
Paperboard, Food 21
Papers, Wrapping 23
Particle Detector 51
Pasteurizers, Continuous 10
pH Data 57
Phosphates 19
Pipe, Plastic 47
Pipe, Pyrex Glass 61
Piping 56
Plastic Film 25
Presses, Vertical 84
Printing on Polyethylene 25
Processing Equipment ..56, 58, 78
Pump Cups 72
Pump Maintenance 56
Pumps, Close-coupled 60
Pumps, Food Handling 82
Pumps, Process 41
Pumps, Sanitary 39
Pumps, Slurry 56
Pumps, Stainless Steel 83

R

Recorders, Adjustable Zero Suppression 48
Recorders, Chart 50
Recorders, Pressure 49
Reduction Equipment 78
Refrigeration Data 59
Regulators, Temperature 73
Resins, Synthetic 57
Roofing Problems 41

S

Salt 6
Scales 52
Scales, Bagging 26
Screens, Gyrating 56
Screens, Vibrating 13
Sealers, Foot-operated 24
Separators, Air 7
Separators, Magnetic 58
Sieves, Calibration of 45
Sifters, Gyratory 59
Sleeves for Carton, Insulated 22
Solder, Galvanizing 69
Spice Oils & Oleoresins 8
Spices 5
Stainless Steel Maintenance 59
Starches 17
Starches, Wheat 9
Starters, Motor 73
Steam, Efficient Use of 60
Steels, Corrosion-resistant 72
Steels, Stainless 43
Stitchers, Carton 27
Strainers, Scraper 14
Strapping, Steel 18, 27
Switches, Liquid Level Safety .. 52

T

Tank Salvaging 43
Testers, Can Temperature 51
Thermometer Data 58
Thermometers, Averaging 49
Tools, Strapping 18
Towels, Paper 63
Trailers 31
Transformers, Constant Voltage 53
Trap Capacity vs Pipe Size .. 47
Traps, Grease 62
Traps, Pipeline 76
Traps, Steam 48, 59, 72, 75, 78
Truck Movies 33
Trucks, Fork 30, 33, 37, 38
Trucks, Hand 34
Trucks, Industrial 26, 39, 61
Tube, Steel 54, 60

V

Valves, Control 53
Valves, Diaphragm 52
Valves, Solenoid 16
Vats, Pressure 3
V-belt Standards 72
V-belts 71
Ventilators, Roof 82
Vibrators 79
Vibrators, Electric 6
Viscometers 49
Voltage Regulation Transformers 53

W

Wash Stands 68
Water Repellents 63
Welding Rods, Aluminum 68
Wheels, Rubber Tread 35
Wire Cloth 27
Wrenches, Pipe 42

Now off the Press!

BENEFITS from NEW HIGH SPEED MIXER

Homogeneous Mixing Now is Obtained in Faster Time . . . at Less Cost with the "ENTOLETER" Mixer.

The "ENTOLETER" Mixer is a new-type centrifugal machine designed to provide thorough mixing and blending . . . in faster time . at reduced cost. In actual manufacturing operations in the food industries, this equipment is producing amazingly uniform mixtures, simply and economically.

Continuous Mixing

The "ENTOLETER" Mixer produces a finished mixture at rates up to 250 pounds per minute. Where ingredient percentages in a formula are sufficiently large to allow accurate metering, a truly continuous operation is achieved.

Adaptable to Batch System

The "ENTOLETER" Mixer is easily incorporated in the processing system as a final mixer. It serves to shorten mixing time, with consequent savings and appreciable improvement in product quality.

SEND TODAY FOR YOUR COPY OF THIS NEW, INFORMATIVE BULLETIN—ILLUSTRATING AND DESCRIBING SOME OF THE ADVANTAGES OF HIGH SPEED CENTRIFUGAL MIXING.

ENTOLETER DIVISION
The Safety Car Heating and Lighting Co., Inc.
1185 Dixwell Avenue, New Haven 4, Conn.

When inquiring check FP 2552 on handy form, pgs. 2-3

Now... You Can PUMP Food Products WITHOUT DAMAGE!

Here's the ideal answer for food product material handling and transfer pumps . . . the revolutionary Fairbanks-Morse "bladeless" impeller pump. As shown in the phantom view of the impeller, the single passage impeller has no blades to catch and damage food products. Apples, oranges, even hard-boiled eggs, have been handled without bruising or cracking.

This great, new development eliminates the damage heretofore considered inevitable with previous styles of transfer pumps . . . opens up a whole new field of pumping applications for the food products and process industries. For complete information, see your Fairbanks-Morse Branch Pump engineer or write for information. Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE,

a name worth remembering

PUMPS • SCALES • ELECTRIC MOTORS • GENERATORS • LIGHT PLANTS • DIESEL, DUAL FUEL AND GASOLINE ENGINES

When inquiring check FP 2553 on handy form, pgs. 2-3

Advertisers in this issue

A

Acme Steel Company 27
Allis-Chalmers Mfg. Co. .. 41, 59
Aluminum Cooking Utensil Company, The 55
American Viscose Corporation, Sylvania Division 25
Ames Iron Works 58
Armstrong Machine Works 48
Aurora Pump Company 60

B

Baker Industrial Truck Division of The Baker-Raulang Company 26
Barnes Company, W. F. and John 12
Benjamin Electric Mfg. Co. 27
Benton Products, Inc. 64
Berlin Chapman Co. 44
Black, Sivalls & Bryson, Inc. .. 67
Bowser, Inc. 60
Bradley Washfountain Co. 68
Bristol Company, The 49
Buffalo Forge Company 43
Buschman Co., Inc., The E. W. 34

C

Cambridge Wire Cloth Co., The 38
Century Electric Co. 57
Chain Belt Company 80
Clark Equipment Company 35
Colorado Fuel & Iron Corporation, The, Wickwire Spencer Steel Division 35
Corning Glass Works 61
Crane Co. 53
Creamery Package Mfg. Company, The 8
Cyclone Fence Division, American Steel & Wire Company, United States Steel Export Company 76
Cyclotherm Corp. 40

D

D & M Products, Inc. 66
Darling Valve & Manufacturing Co. 72
Day Company, The 70
Diamond Crystal-Colonial Salt Division, General Foods Corporation 6
Dings Magnetic Separator Co. 58
Dodge & Olcott, Inc. 8
Dow Chemical Company, The 65
Dow Corning Corporation 16
Dracco Corporation 37

E

Economic Machinery Company, Division of Geo. J. Meyer Manufacturing Co. 28
Elwell-Parker Electric Co., The 39
Exact Weight Scale Company, The 52

F

Fairbanks, Morse & Co. 82
Farris Stacon Corporation 73
Filtrol Corporation 6
Flexible Steel Lacing Co. 58, 80
Flexrock Company 82
Fluid Systems, Inc. 4
Food Machinery and Chemical Corporation, Canning Machinery Divisions 29
Foxboro Company, The 52
Fuller Brush Co., The 66
Fuller Company 31

G

Gair Company, Inc., Robert .. 28
Gallaher Company, The 80
Gates Rubber Company, The 71
Gaylord Container Corporation 21
General Electric Company 14, 15
General Mills, Inc. 9
Groen Mfg. Co. 36

H

Hamilton Copper & Brass Works, Inc. 78
Hapman Conveyors, Inc. Division Hapman-Dutton Company 32
Hinde & Dauch Paper Co. 26
Hormann & Co., Inc., F. R. .. 60

I

Ilg Electric Ventilating Co. 82
Ingersoll Steel Division, Borg-Warner Corporation 72

J

Jackson & Church Company ..... 4th Cover
Johnson Corporation, The .. 16, 42
Josam Manufacturing Company 62

K

Kalamazoo Vegetable Parchment Company 23

L

Lee Metal Products Co., Inc. 74
Link-Belt Company 13
Liquidometer Corp., The 51
Lumenite Electronic Company 50

M

Magnus Chemical Co. 68
Magnus, Mabee & Reynard, Inc. 5
Manton Gaulin Manufacturing Co. ..... 3rd Cover
Marley Company, Inc., The 16, 77
Metzgar Co. 36
Meyer Manufacturing Co., Geo. J., Economic Machinery Company, Division 28
Minneapolis-Honeywell Regulator Co., Industrial Division 51
Mortell Co., J. W. 68
Multi-Metal Wire Cloth Company, Inc. 27
Munson Bag Company, The 24

N

National Engineering Co., Simpson Mix-Muller Division 79
National Starch Products 11
Neff & Fry Co., The 35
Neptune Meter Company 50
Niagara Blower Company 24
Nichols Engineering & Research Corp., Nerco-Niro Spray Dryer Division 44
Nicholson & Co., W. H. 78

O

Oakite Products, Inc. 64
Omega Machine Co. 38
Orr & Sembower, Inc. 42

P

P & L Welding & Machine Works 78
Pangborn Corporation 64
Pfaudler Co., The 3
Pfizer & Co., Inc., Chas. 2nd Cover
Pittsburgh Lectrodryer Corporation 74
Pressed Steel Tank Company 54
Putman Publishing Company 75, 78

R

Republic Steel Corporation, Steel & Tubes Division 54
Richardson Scale Co. 22
Ridge Tool Co., The 42
Robbins & Myers Inc., Hoist and Crane Division 36

S

Safety Car Heating and Lighting Co., Inc., The, Entoleter Division 81
Sarco Company, Inc. 72
Sargent's Sons Corp., C. G. .. 17
Screw Conveyor Corporation .. 34
Simplicity Engineering Co. 56
Spray Engineering Co. 73
Sprout-Waldron & Co., Inc. .. 73
Stanley Works, The 18
Steel & Tubes Division, Republic Steel Corporation 54
Steelcote Mfg. Co. 66
Sturtevant Mill Company 7
Syntron Co. 6

T

Taylor Instrument Companies 51, 52
Towmotor Corporation 33
Tri-Clover Machine Co. 39
Twin Disc Clutch Company 45

U

Union Chain and Manufacturing Company, The 46, 47
U.S. Electrical Motors, Inc. .. 45

V

Victor Balata & Textile Belting Co. 78
Victor Chemical Works 19

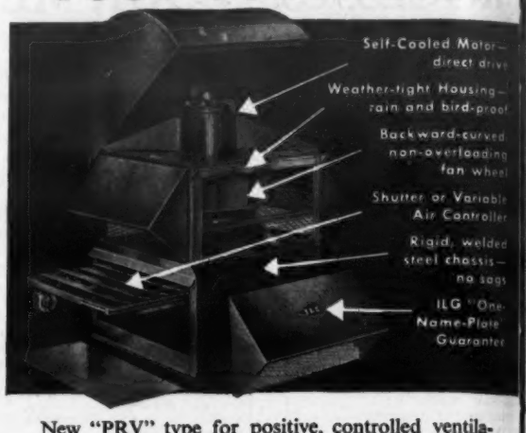
W

Wallace & Tiernan Company, Inc. 76
West Disinfecting Company 63
Westinghouse Electric Corporation, Sturtevant Division 69
Wheelco Instruments Company 50
Whitney Chain Company 26
Wickwire Spencer Steel Division of The Colorado Fuel & Iron Corporation 35

Y

Yale & Towne Manufacturing Co., The 57
Yarnall-Waring Company 76

New ILG power roof ventilator


Self-Cooled Motor—direct drive
Weather-tight Housing—rain and bird-proof
Backward-curved non-overloading fan wheel
Shutter or Variable Air Controller
Rigid, welded steel chassis—no sags
ILG "One-Name-Plate" Guarantee

New "PRV" type for positive, controlled ventilation, regardless of wind or weather conditions, through vertical flues or duct systems. Get data—send inquiry card or phone nearby Branch Office. Ilg Electric Ventilating Co., 2815 N. Crawford Ave., Chicago 41, Illinois.

ILG VENTILATION

FREE! Bulletin No. 1901

When inquiring check FP 2554 on handy form, pgs. 2-3

Restore Broken Floors . . . F-A-S-T

CONCRETE PATCH *SETS INSTANTLY!*

TAMP SMOOTH! TRUCK OVER

No traffic tie-ups! Simply shovel INSTANT-USE into hole — tamp and run traffic over immediately! Quick! Durable! Repair cracks and breaks in concrete floors . . . or make complete overlays. NOTE: Plasticizer makes INSTANT-USE easy to scoop out of container . . . easy to level, to tamp, to use. There's a Flexrock material for every floor condition — oil, acid, wet, dry! Tell us your problems!

MAIL COUPON for TRIAL OFFER and HAND BOOK OF BUILDING MAINTENANCE

INSTANT-USE

FLEXROCK COMPANY (Offices in principal cities)
3642 Filbert St., Philadelphia 4, Pa.

Please send me complete INSTANT-USE information, details of TRIAL ORDER PLAN and HAND BOOK OF BUILDING MAINTENANCE—no obligation. (Clip and attach Coupon to Co. letterhead).

Name .....
Company .....
Address .....

When inquiring check FP 2555 on handy form, pgs. 2-3

"That's Interesting"

Contract for canned bread completed by L.A. bakery

A government contract for canned bread was recently completed at the Long Beach, Calif. plant of Weber Baking Co. Special formula was of high calorie content for weight and volume of the item. Bread, in two pieces, was baked right in the can. A process called flip-testing was developed to ensure vacuum within the tolerance allowed. Bread will remain edible for an indefinite period, and can be brought back to oven freshness by reheating the can before opening, driving the moisture back into the loaf. (Interstate Bakeries Corp., Los Angeles 36, Calif.)

Food plant sanitation course

"Food Plant Sanitation" is the title of a 24-lesson course, announced by International Correspondence Schools, which the directors state is intended for plant inspectors, processing supervisors and food technologists. Lesson series is set up for those who wish to enroll individually or for groups of employes enrolled by their companies. Instruction covers cleanliness of equipment and utensils, control and extermination of rodents and insects, and the detection and use of contaminating materials.

Included in the 24 lessons are "Purification of Water," "Sanitation in Quality Control," "Building Construction and Equipment," "Establishing and Maintaining Sanitary Practices" and "Sanitary Aspects of Packaging Materials." (John C. Remsen, Director, School of Chemistry, ICS, Scranton, Pa.)

Frozen apple juice concentrate

Consumer survey, in two western cities, showed a favorable response to frozen concentrated apple juice. Product is a blend from several apples. In the process, volatile flavor constituents of the fresh juice are recovered and mixed back into the concentrate just before it is frozen. This gives the product its full, natural apple flavor. (USDA, Washington, D. C.)

U. S. purchasing cottonseed oil

The Department of Agriculture recently announced that it would offer to buy cottonseed products as one means of keeping grower prices of the seed from dropping below $65.00 a ton. Cottonseed oil, cake or meal and linters will be purchased from crushers who certify that they paid growers not less than the support rate.

This action follows a previous plan by which cottonseed prices would be supported by loans to growers at $65.50 a ton for base grade 100. In areas where storage might not be available the first plan provided for buying seed directly from producers at $61.50. It is believed that the new plan will encourage normal processing rather than storage of seed under grower loans.

Macaroni going to town with Yankee Doodle

Macaroni production for the first six months of this year totaled 319,052,406 lb indicating that the year's total will exceed one billion. National Macaroni Week — October 18-27 — is expected to stimulate consumption to this forecast increase over last year's consumption.

Noise reducing window

Closing a window only partially shuts out noise, unfortunately. However, a double pane glass now does a surprisingly effective job of reducing sound transmission through windows. This dual pane window glass is known as Thermopane and is a development of Libbey-Owens-Ford Glass Co., Toledo 3, Ohio. This factory-built transparent glass unit is composed of two, or more, lights of glass separated by ¼ or ½-inch of dehydrated captive air. It is hermetically sealed around the edges with a metal-to-glass bond. Tests show 18% reduction in noise can be achieved with two ¼ inch panes and a ¼ inch air space. Increasing the air space to ½-inch reduced sound transmission 44%. The glass, of course, also has important applications as insulation and effectively cuts heat losses.

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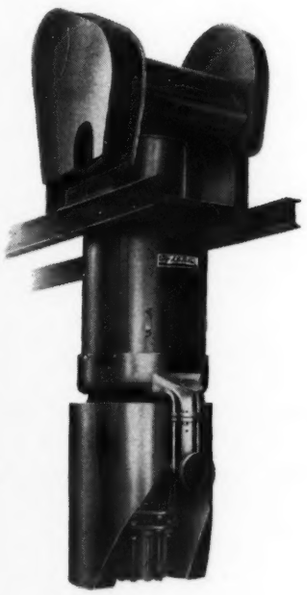

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